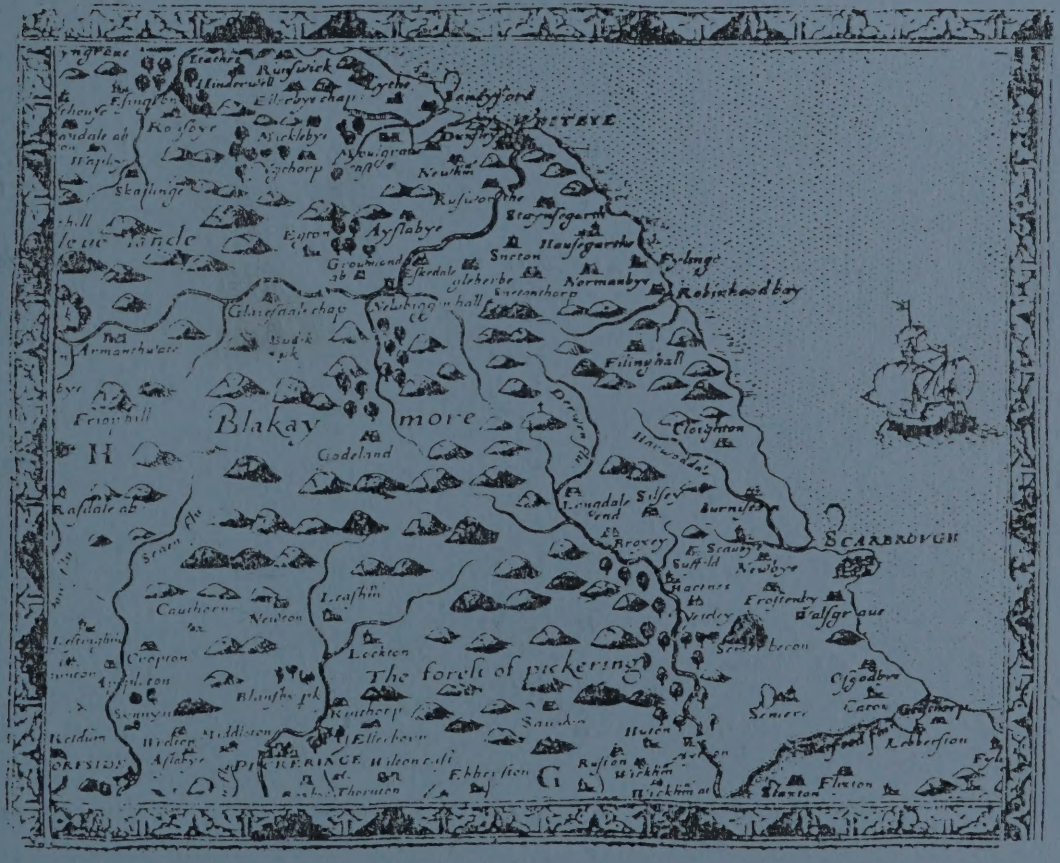
THE TRANSACTIONS OF

THE SCARBOROUGH ARCHAEOLOGICAL AND HISTORICAL SOCIETY



Number 28

1990

SCARBOROUGH ARCHAEOLOGICAL AND HISTORICAL SOCIETY

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Edited by
Trevor Pearson

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EDITORIAL

This, the first Transactions of a new decade, contains an interesting variety of historical and archaeological topics indicating that research into the area's past is as busy as ever.

For several years the National Trust has been surveying and restoring the remains of the Peak Alum Works at Ravenscar during the course of which much new information has been discovered about the history and operation of the site. In his article Gary Marshall, The National Trust archaeologist at Ravenscar, presents us with a detailed discussion of some of the new documentary and archaeological research that is taking place into this once important local industry.

The Society continues to conduct excavations in the town on a regular basis, for which it achieved national recognition in 1990 by winning the prestigious Pitt-Rivers Award for the best archaeological work by a voluntary group in Britain. The certificate awarded to the Society is illustrated opposite, whilst various aspects of recent excavations are discussed in these Transactions. As well as the summary of work conducted in 1989 and 1990, we have a more detailed report by our Field Officer, Chris Hall, on the dig at 10-10A St. Sepulchre Street where evidence was found for the vanished Franciscan Friary. The Paradise excavations were completed in 1990 and in this issue Peter Ryder, an expert on medieval sculptured stones, gives us some thoughts on the date and stylistic affinities of two fragments of grave slab that came to light during the work.

As well as conducting excavations, Society members also continue to research the historical records of the area of which probate inventories are a particularly rich source. Philip Craven has examined probate inventories for North-East Yorkshire and his description of their contents evokes a rural past that has now largely disappeared.

In addition to thanking all those who have contributed to these Transactions, I would like to record my gratitude to Chris and Frances Hall for their hard work in preparing the typescript of one of the lengthiest issues of recent years. Contributions to the 1991 Transactions will be welcome from all members and should be submitted to the editor as soon as possible.

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Pitt-Rivers Award Certificate

EXCAVATIONS IN SCARBOROUGH OLD TOWN - 1989 AND 1990

BY TREVOR PEARSON & CHRISTOPHER HALL.

INTRODUCTION.

During 1989/90, the Society has continued its active campaign of excavations, evaluations and watching briefs in the Scarborough Old Town and this report gives a brief summary of the work carried out. The site locations are illustrated in Figure 1.

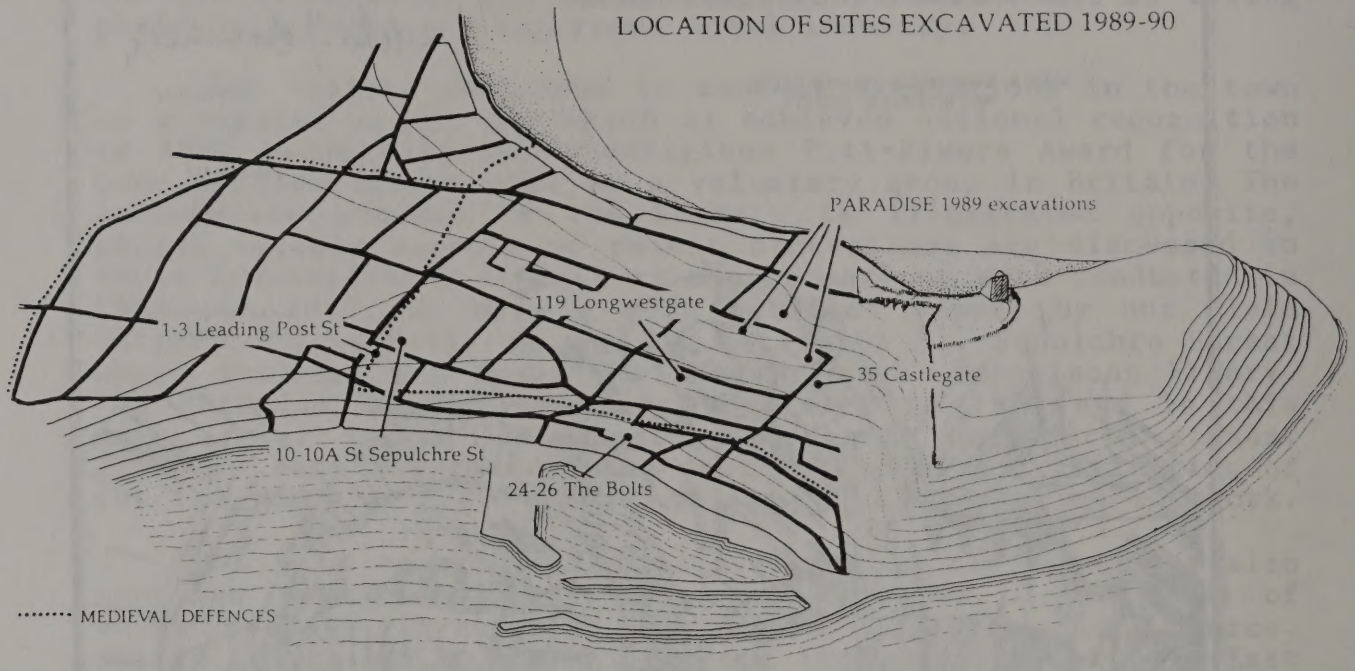


Figure 1

In five cases interim reports have been published in advance of final definitive reports to appear in due course [1].

i) PARADISE - PHASES TWO, THREE AND FOUR.

Following the evaluation trenches excavated on the Paradise Estate in 1988, reported in Transactions No. 27 [2], the Society jointly excavated with Birmingham University, in two phases, three areas of the estate threatened by a new housing development.A final phase of excavations was carried out solely by the Society.

Although the estate covers about 3% of the medieval town and has been mainly open ground for at least 250 years, widespread damage was done to its archaeology in the 1760s by clay quarrying for brickmaking.

Phase two was carried out between December 12th 1988 and January 4th 1989. Trench A9 was excavated at the eastern extremity of the former brickfield and uncovered the levelled remains of the clamp kiln used to fire the bricks. Set on a pavement of stone slabs, it overlay a backfilled clay quarry of the 12th century. Some 80 metres to the east, trench B5 was excavated against the western exterior wall of the 18th century Paradise House, the former residence of the estate owners. The trench exposed part of a medieval building fronting on to the southern side of Paradise Street. Constructed with clay-bonded stone foundations and possessing a rudimentary clay floor, the building went out of use later in the middle ages when a 2.5 metre high stone boundary wall was constructed along the street frontage and the area behind became gardens.

Phase three was carried out between 27th May and 4th June 1989 and comprised Trench E3, which was excavated on the north of the estate at the rear of an 18th century warehouse, stable block and malt kiln opposite Paradise House. Ephemeral structural remains of possibly 12th century date survived beneath accumulations of medieval garden soil and had been substantially damaged by post-medieval pit digging and another 18th century clay quarry for brickmaking.

Elsewhere the trench exposed a cobbled pavement 2.5 metres wide and running north-south at right angles to Paradise Street with the drystone foundations of buildings on either side. One of these structures has been excavated and appears to have been a single-roomed building dating from the 15th century, running 3 metres back from the cobbled pavement. This may be one of the three cottages referred to in this area in 1546 which belonged to the chantry chapels in the parish church.

Phase four was carried out over a series of weekends between September and the end of December 1989 and was a continuation of phase 3 at the rear of the warehouse, stable block and malt kiln. The opportunity was taken to investigate and expose more of the single roomed structure to the west of the cobbled pavement (fig 2).

The north and east walls stood four courses high built of squared stones laid in a clay 'mortar'. A series of squared depressions at regular intervals in the upper face of a number of stones appeared to be location slots for a timber superstructure indicating that what remained was the plinth wall of a timber framed building. The west wall was of more rudimentary construction and appeared to have been robbed out and replaced by a property boundary or shelter wall on approximately the same alignment.

Figure 2: Plan of structure excavated in Phases 3 and 4

The south wall had been completely destroyed probably at the time of construction of a large cistern associated with the adjacent malting kiln.

After the single roomed structure had gone out of use as a dwelling, it appears to have been used for some industrial purpose. A circular hearth in stone and brick was inserted in the north-east corner of the room, abutting the two main walls. There was substantial evidence of burning leading to the build up of a considerable depth of ashy layers over the floor. Clearly this hearth was too large in relation to the room to have been used for domestic purposes.

Taken together, the excavations of 1988 and 1989 have revealed a complex sequence of occupation and abandonment before the present Paradise Estate came into existence. It would appear that during the formative years of the town in the 12th century the steeply sloping land to the south of Paradise Street was used for quarrying clay, possibly to supply construction work at the castle or for pottery manufacture. Occupation was initially restricted to the more level ground on the north side of Paradise Street. Pressure on land may account for the spread of buildings along both sides of the street in the later 12th or 13th centuries, the building excavated in Trench B5 being one example, along with others encountered in the 1988 evaluation. It was probably the creation of the Newborough in the 13th century which led to the abandonment of these buildings as people moved to the more extensive plots made available by the re-alignment of the town defences on the west side of the town. Subsequently gardens are attested at Paradise in both documents of the later middle ages and by excavated evidence. The name 'Paradise' could indicate that the Cistercian monks who administered the parish church took advantage of the relative desertion of this part of the town to site their establishment here. Likewise in the 15th century the cobbled street and adjacent cottages were laid out on the north side of Paradise Street on what had formerly been gardens.

ii) 10/10A ST. SEPULCHRE STREET, SCARBOROUGH.

This small excavation was carried out in the back garden of the house during 29th and 30th April and 1st May 1989. A full report appears elsewhere in this edition of Transactions.

iii) 1-3 LEADING POST STREET.

Building work carried out in August 1989 presented an opportunity for the Society to examine a portion of the town's 12th century defences at the junction of Leading Post Street and St. Sepulchre Street, some 60 metres north of the section examined at 7 Leading Post Street in 1988, reported in Transactions No.27 [3].

Cellars had resulted in the removal of all traces of the defences apart from the lower ditch fills over most of the site, except on the northern edge of the site where a section of the rampart survived. This rampart was formed of clay upcast from the ditch. It was 3 metres wide and, though truncated, attained a height of 40cms. In the centre of the rampart a 1.5 metre wide robber trench gave the approximate position of the wall, although nothing could be established about its width or method of construction.

Between the rampart and the ditch a 1.5 metre berm was discovered which, from plotting the ditch sides across the site, only extended some 6 metres south from St. Sepulchre Street. It may represent a deliberate narrowing of the ditch to accommodate the postulated entrance into the town at the western end of St. Sepulchre Street. The fill of the ditch was a compacted black silt containing few organic traces compared with the 1988 section, although the disarticulated skeleton of a horse was recovered from the approximate centre of the ditch. These defences probably went out of use when the town expanded inland in the 13th century and the defences were subsequently re-aligned around the Newborough.

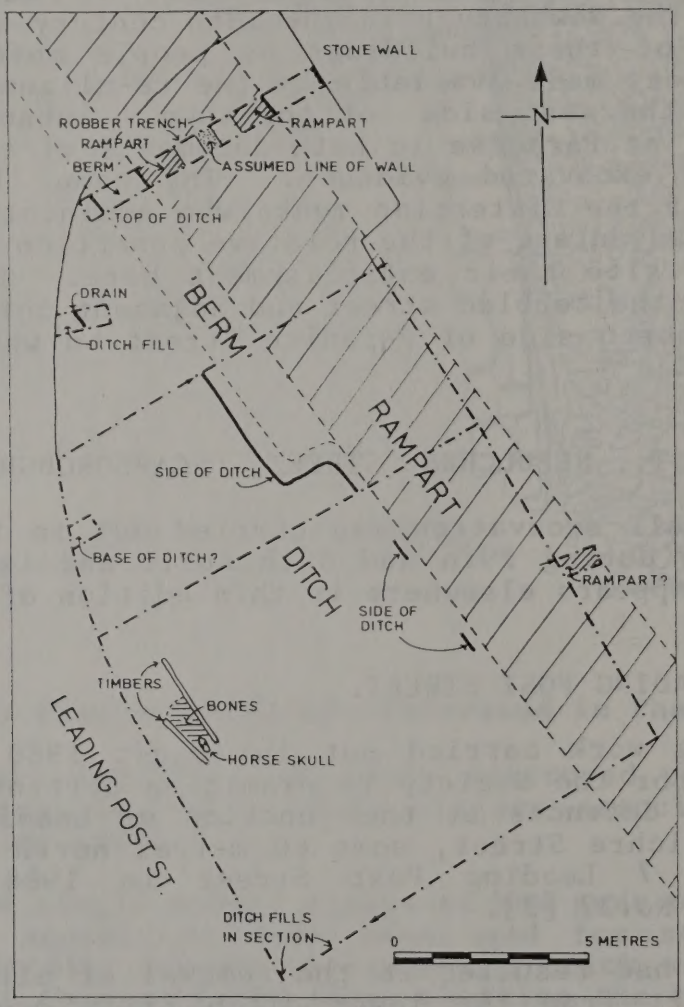


Figure 3: Plan of 1-3 Leading Post Street.

iv) 35 CASTLEGATE.

During the weekend of September 2nd-3rd 1989, the Society excavated a trial trench on a vacant plot of land adjoining the north side of No. 35, Castlegate, at the request of the owner,Mr. A.E. Richmond . The excavation was designed to assess the site's archaeological potential prior to the building of an extension to the house on this side garden.

The excavation supported cartographic evidence that the site has not been occupied by a major building for several centuries. It was found that medieval deposits survive to a considerable depth along the street frontage about 20cm below the present street level. A cursory examination of the pottery suggests the structural sequence begins in the twelfth century with the levelling of the site and the construction of a stone wall, which may prove to be part of one of the earliest buildings constructed along Castlegate. This was apparently superseded by a later wall at a higher level, probably part of a second building.

In view of the importance of this site, excavations recommenced in late 1990 which will be the subject of a further report.

v) 24-26 THE BOLTS

Following demolition of two 19th century cottages and prior to re-development of the site, the Society undertook an evaluation excavation between May 5th and 7th, 1990.

The site lies on the north side of The Bolts, a narrow alley running between West Sandgate and Whitehead Hill; the name is derived from Les Boutes, meaning the vaults or common latrines. It has been argued that the block of land between the cliff and the sea is one of the most important archaeological zones in the town, partly because of the intensity of medieval activity here and partly because of the strong likelihood of waterlogged stratigraphy resulting in high levels of preservation. It was hoped that the excavation would cast some light on the relationship between the undercliff, progressive quay lines and land reclamation.

The principal trench was excavated to a depth of two metres, where natural clay was encountered.

The earliest phase was a layer of small rocks firmly set in a clay matrix which may have served a waterfront function such as a slipway or a crude form of breakwater. This was overlain by a layer of dark brown soil containing numerous chips of limestone and charcoal fragments. Apparently, this layer had been deliberately tipped, possibly from building works taking place in the vicinity.

Phase 3 was a thick deposit of waterlogged debris richly organic in content in two distinct layers, but with no further stratification, suggesting the rapid dumping of refuse. The deposit seemed to be typical domestic refuse containing numerous animal and fish bones, shells, leather off-cuts, fragments of wood and sherds of mainly 14th-century pottery.

Phase 4 comprised a thick deposit of brown sandy clay, and stone walls, thought to be the foundation of a house, the sandy clay providing a dry subsurface for the floor. This layer contained exclusively medieval pottery of 14th century date, thus establishing a probable date for the building.

It appears that this site was 'reclaimed' for building purposes by terracing back the boulder clay cliff and then dumping to create a level, elevated platform to provide protection against high tides. Ceramic evidence from the site and documentary evidence indicate a 14th century date. Whilst this may seem somewhat late when one considers that the harbour development probably started in the mid 12th century, one can only suppose that builders found it easier to take land from the sea by dumping than to excavate tons of clay by terracing back the cliff slope. By the time land scarcity forced the terracing and consolidation of this site, the harbour front was probably 20 metres to the south.

This excavation was also important because it showed that waterlogged deposits exist much further from the sea than had hitherto been supposed. The Society was fortunate to have a sample of this deposit from Phase 3 analysed by the Environmental Archaeology Unit, University of York.

vi) 119 LONGWESTGATE.

Between August 25th and 27th 1990 the Society undertook an evaluation excavation to assess the archaeological implications of the proposed construction of a swimming pool.

The trench, measuring 5.0 metres by 1.5 metres, was excavated to a depth of 2.5 metres and encountered entirely post medieval deposits in three distinct layers. The lowest was a dark brown clayey soil containing fragments of limestone and flecks of charcoal. It was overlain by an homogeneous clayey soil, orange brown in colour, containing few inclusions. However at the northern end it was overlain by a lens of crushed limestone fragments and at the southern end by a back filled gully containing several large stones, suggesting the line of a robbed wall. The overlying layer, a dark grey loose soil flecked with shell and stone fragments, contained two distinct dumps of limpet shells and a second wall trench.

The deposits were probably tipped from the north and not in one continuous operation. The lower wall was in position for some time before it was robbed and may have provided a temporary barrier to prevent spoil from tipping uncontrollably down the slope.

Because of the steepness of the natural gradient here, it is apparent that the dumping was a levelling operation in order to create more useful yards and gardens.

vii) MINOR EXCAVATIONS AND WATCHING BRIEFS.

A number of minor excavations and watching briefs have been carried out and the opportunity is taken here to provide brief reports.

33 Foreshore Road. During the re-flooring of the rear extension of this property, modern back-fill was observed on the course of Staithe Bolt. No evidence of the alignment of The Staithe was indicated, however.

Castle-by-the-Sea, Castle Road. During excavations for a gas pipe in the south side garden, human bones were found. A brief report and map have been deposited in the Rotunda Museum.

7 Palace Hill. During excavation of a trench for an extension, fragments of Staxton Ware and leather were recovered and a timber post a maximum of 740mm long and approximately 90mm square. This post was pointed at one end, driven in at an angle and surrounded by a disturbed mixture of clay. A similar post was revealed in 1987 at East Sandgate [4], in association with a revetment wall, but at Palace Hill the later disturbance was too extensive, and the area of excavation too small to allow an interpretation to be made.

25 St Mary's Street. During alterations to the basement, a sterile but siltier than usual clay was observed and excavated to a depth of 300mm. Stone was observed forming all four cellar walls of this structure, which is brick above ground.

27 St Sepulchre Street. A watching brief was carried out in May 1990 at the request of the County Archaeologist during foundation works for an extension. The southern foundation trench exposed a surface comprising a patch of cobbles bounded by two sandstone blocks resting on a hard clayey soil. A third sandstone slab was uncovered to the west. No pottery or other finds were made and in view of the limited area revealed it is difficult to assign either a date or a function to these features, although a path seems the most likely explanation.

ACKNOWLEDGMENTS.

Financial sponsorship of specific excavations has been provided by G. E.& W. D. Bowser, N. Murphy, S. G. Joinery & Builders and A. Ayckbourn. We have benefited from two grants from the Royal Archaeological Institute's Lloyd's Bank Fund for Independent Archaeologists. In February 1989 the Society was granted the David Thubron Memorial Award by C.B.A. Group 4 in recognition of the work carried out at 7 Leading Post Street, reported in Transactions 27; this has been used for the purchase of much needed equipment.

Last, but certainly not least, this series of excavations could not have been successfully completed without the willing help of the numerous members and friends of the Society who have freely given of their time often under arduous site conditions. Particularly stalwart support on site has been given by Patrick Argent, Dorothy Chaplin, Ron Davies, Kay Dunderdale, Frances Hall, George Luke, while much of the finds washing and marking has been carried out by Ken and Marion Gover

REFERENCES.

1. PEARSON, T., 1989, Paradise, Scarborough - a report on archaeological excavations - December 1988.

PEARSON, T., 1989, Paradise, Scarborough - a report on archaeological excavations - May-June 1989.

PEARSON, T., 1990, An archaeological evaluation of 24-26 The Bolts.

PEARSON, T., 1990 An archaeological evaluation of 119 Longwestgate.

Copies are available for consultation at the Rotunda Museum and Scarborough Reference Library.

2. PEARSON, T. and HALL, C., Excavations in Scarborough 1987 and 1988. Transactions of S.A.H.S. No.27, 1989.

3. HALL, C., Excavation at Leading Post Street, Scarborough. Transactions of S.A.H.S. No. 27, 1989.

4. PEARSON, T., Excavation at East Sandgate, 1987.

TWO MEDIEVAL GRAVE SLABS FROM PARADISE, SCARBOROUGH

BY PETER F. RYDER

Two grave slabs were removed from the rear wall of the out- buildings at Paradise during the recent re-development. The following are some thoughts on them.

Both crosses are of a fairly common form, a derivant of the 'bracelet' cross, i.e. one made up of four broken or open circles set back-to-back, with round-leaf terminals. Round-leaf bracelet crosses are dated by Lawrence Butler [1] to the period 1180-1220. Such was the popularity of this design in the north-east that I would be inclined to ascribe them a much longer range, on the basis that I believe that a mason carving a slab might be inclined - or might have been asked - to copy an older monument rather than produce a stylistically up-to-the-minute design. It is probably safe to say that the design was at its most popular in the 13th century, so there is a good chance that these slabs are of that date (and most likely in the first half of the century).

Both of the Paradise slabs have quite 'open' bracelets, with incised lines paralleling their edges; this sort of decoration occurs quite frequently, often on higher-status monuments such as Robert Bushel's slab of c.1300 at Easington-in-Cleveland, and a recently discovered priest's slab at Guisborough Priory. The smaller fragment (see Figure 1) shows cross-bands linking the bracelets, another common feature.

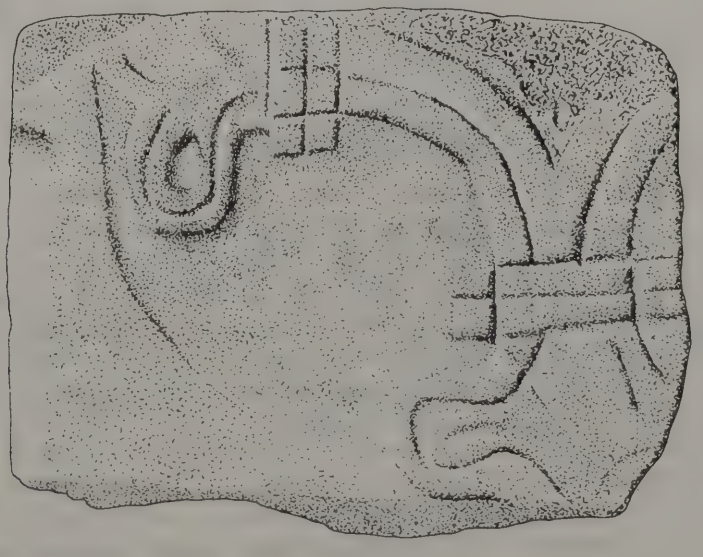


Figure 1 (Scale 1:4)

The quatrefoil at the centre of the cross head of the larger piece (Figure 2) is a less common feature, although seen on several headstone crosses at Rothwell (West Yorkshire) and on a slab at Gainford (Durham).

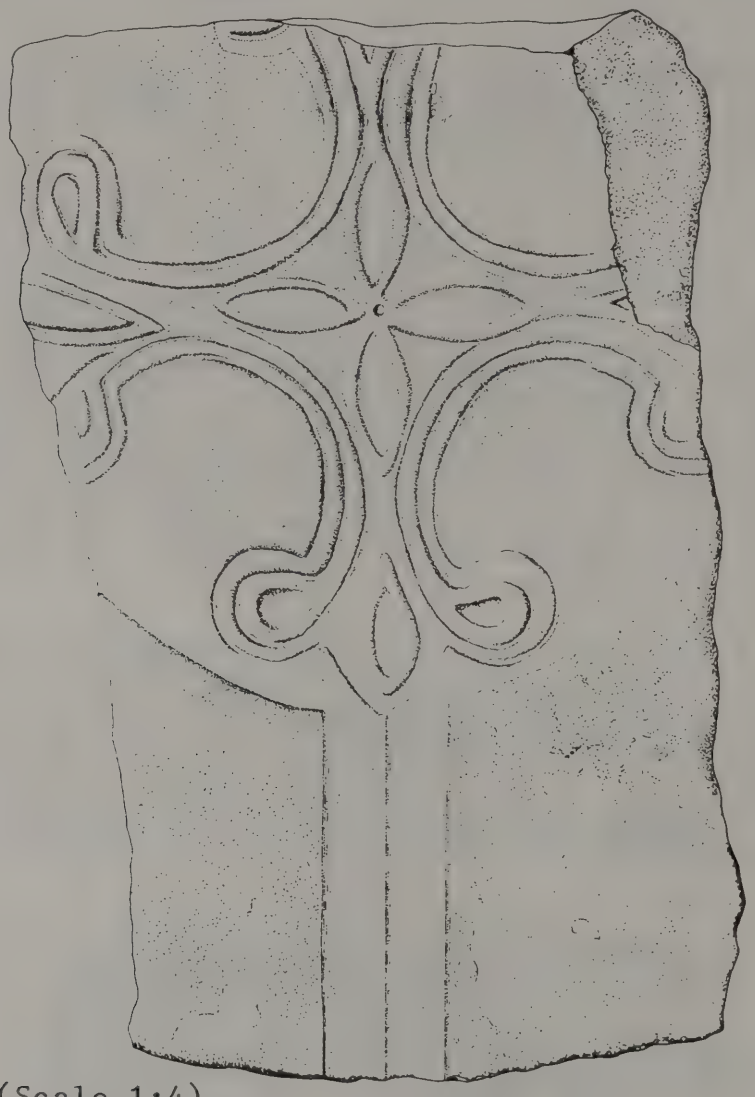


Figure 2 (Scale 1:4)

On both slabs the bracelet cross is set within a circular panel - this is again more or less standard. I would expect the head to be carved in relief within the panel, whilst the remainder of the design is incised. The medial line on the cross shaft of the larger piece (Figure 2) is probably a development of the mason's original setting-out line which can often be faintly traced on slabs.

REFERENCE

1. BUTLER, L., 1964 'Minor Medieval Monumental Sculpture in the East Midlands' Archaeological Journal CXXI p.129.

THE RAVENSCAR ALUM WORKS - NEW EVIDENCE FROM DOCUMENTARY AND ARCHAEOLOGICAL SOURCES

BY GARY MARSHALL

INTRODUCTION

Over the past four years the National Trust has sponsored a detailed programme of archaeological survey and excavation on the Ravenscar alum works and is currently (December 1990) funding a three year consolidation programme to preserve the standing remains of the former Boiling House. The positive approach of the Trust towards preserving this important monument is characteristic of the increasing commitment towards recording and conserving industrial archaeological sites, not just within the Trust, but on a national basis by archaeologists and organisations concerned with preserving our archaeological heritage.

The aim of this article is to summarise the results of the survey work, and to present primary evidence, obtained from documents and from archaeological excavation, which has not been previously published. An attempt will also be made to match the various processes described in contemporary documents with surviving archaeological evidence.

OPERATIONAL HISTORY.

It is beyond the scope of this article to recount the historical development of the English alum industry from the mid 16th century to its demise in the 1870s. Having said this, it is important to stress that placed in context, the Ravenscar works was not only one of the earliest established in the North-East but also one of the longest to operate. George Young, in his 'History of Whitby', states that the Peak or 'Blackhead' Works, as it was known, was established by Sir Bryan Cooke around 1615 [1] when there were also alum houses at Guisborough, Sandsend and Asholme. The first positive reference dates from 1674 when Sir David Foulis of Ingleby, the lessee, made 28 tons of alum, which was probably less than 5% of total output within the region [2]. Capacity must have increased over the next twenty years, following the removal of the royal monopoly on production, because in 1698 the new proprietors - Robert Squire, Edward and William Bower and John and Thomas Langstaffe - signed a four year agreement with Mary Cholmley to limit the number of boiling pans in the alum house to ten, and to operate not more than six pans in twenty-four hours [3].

In return Mary Cholmley, owner of the Manor of Whitby, agreed to purchase all alum produced at a price of £9 per ton.

The problem of overcapacity amongst the various alum houses, resulting in overproduction and a decline in the value of processed alum, was a cyclical problem which dogged the English alum industry throughout its operational history. It became so serious that from 1736 Sir George Cooke received annually the sum of £430 from the Duke of Buckingham - owner of the Sandsend and Asholme works - for 'laying idle his works' for a period of twenty-one years. Peak was reopened in 1744 when the price of alum had risen to £14 per ton [5] but was then to experience mixed fortunes under a succession of proprietors over the following forty year period. Ultimate ownership of the quarries and alum house remained in the hands of the Cooke family, but these were leased to various individuals, including Henry Cowley, a London merchant, who paid £4,550 in 1771 for the lease [6].

The lease was advertised again for a twenty-one year period in 1784 [7]. Output was again limited by a manufacturing agreement which determined that Peak would utilise no more than six boiling pans, each capable of producing six tons per month [8]. The agreement was an attempt by the various concerns at self-regulation as a means of stabilising output. This allowed the Peak works an annual output of about 430 tons in the 1780s - approximately 18% of total production.

During the early part of the 19th century Peak was operated directly by the Cooke family in conjunction with the neighbouring Stow Brow Works, producing about 300 tons or 10% of Yorkshire's output [9]. Neither works operated over the period from 1810 to 1818 when the price per ton fell from £12 to £8 [10]. Production did, however, begin again in the 1820s, it would seem quite successfully. Peak produced a record total of 601 tons of alum in 1822, at a cost of £9 6s per ton, giving an estimated profit of £4 per ton [11]. This achievement was no doubt partly a consequence of an improved understanding of the chemistry involved, resulting in the introduction of new technology. William Watson noted that Peak was experimenting with steam evaporation during the 1900s[12], rather than using open boiling pans. The experiment proved to be unsuccessful. By the 1830s a lead chamber and furnace had been installed for producing sulphuric acid [13] which proved more successful as a means of extracting remaining aluminium sulphate from the waste calcined shale. It was also used in the production of Epsom Salts (magnesium sulphate).

Output in the mid 1830s was averaging between 60 and 80 tons per month, giving an estimated annual profit of £2,000 [14].

Robert Campion, a prominent Whitby banker, became the proprietor in 1834 after acquiring the lease for the sum of £3,700 [15]. Campion introduced a degree of horizontal integration into the undertaking after establishing a muriate works on the River Esk [16] for the supply of alkali. He also operated three vessels - 'Peak', 'Little Henry' and 'Blucher'- for bringing in raw materials [17]. After four years however Campion appears to have run into difficulties and therefore sub-let the works to Samuel Brewin for an annual rent of £300 [18]. Brewin continued the works for a further three years until as a consequence of bankruptcy Campion was forced to sell the lease by auction [19] in the following year (1842). It was acquired by Charles Liddell and Lewis Dunbar Gordon, who also leased the Mulgrave alum works from Lord Normanby [20].

By this date the surviving North-East works were facing stiff competition from the Pendleton works near Manchester and the Goole works outside Hull. These were both established by Peter Spence who patented in 1845 a method of producing pure alum using concentrated sulphuric acid, which by direct application to the calcined alum shale, removed the necessity of the evaporation stage. Peak struggled on with the older evaporation method until 1862 when it was acquired by William Hammond from the Trustees of the Cooke family. The works were described as being in "good working order", capable of producing up to 1200 tons of alum and 800 tons of rough Epsom Salts [21]. However, by this date the price of alum had fallen to as little as £8 per ton and as a consequence Peak ceased production, thus terminating 250 years of industrial activity.

SURVIVING ARCHAEOLOGICAL EVIDENCE.

Quarrying

The production of alum at Ravenscar has left for posterity a characteristic industrial landscape which still contains extensive archaeological evidence illustrating the processes involved. These processes were arranged as a logical sequence with the alum liquor produced in the quarries descending from the moorland edge to the cliff-top boiling house, from which point the refined alum crystal was shipped out from the dock at shore level.

This sequence is represented on a sale plan dating from 1862 (figure 1), when the Peak estate was acquired by William Hammond [22]. Above the quarries on the moorland edge there were six reservoirs feeding water to the steeping pits. Today these reservoirs remain in use as a supply of water for the village. Below the reservoirs the Jurassic alum shale was mined from the two quarries by cutting a series of stepped terraces into the base of the shale.

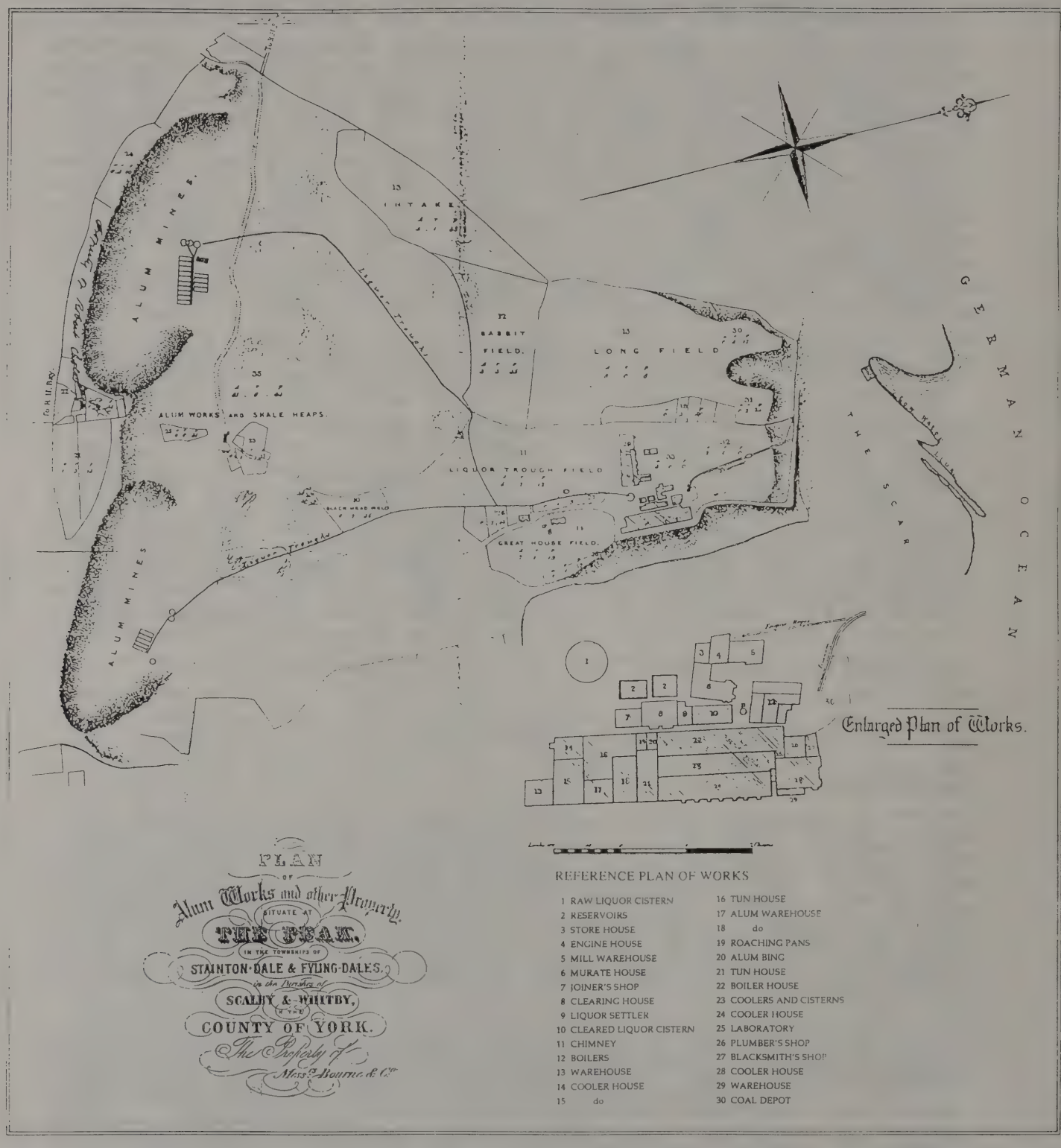


Figure 1
Plan of The Peak Alum Works circa 1862

This operation, together with the following stages of calcining and steeping, was recorded in minute detail by H. B. Carter, the noted Scarborough seascape artist, when he painted the west quarry in 1843 [23]. His painting shows two smouldering calcining clamps composed of quarried shale brought from the back of the quarry in barrows travelling on elevated ramps. Behind the clamps is a substantial rectangular enclosure composed of fresh shale, pierced by a U-shaped opening in its east wall. This suggests that it is the base of a new clamp, with the opening providing a draught to the interior after it had been ignited.

The quarried shale was initially referred to as 'mine'. After calcining it was quantified in terms of 'pits', varying in size between 40 and 57 cubic yards. An account of stock produced in 1839 calculated that the bared quarry face had a potential of 3¼ million pits [24] with a value of approximately £6 million. Each pit contained about 114 tons of mine, hence the potential yield from the bared face could have amounted to as much as 370 million tons of shale. On a more modest scale it was estimated that the existing calcined heaps contained respectively 463 pits and 95 pits, each pit with a value of £4.

Carter's painting also depicts two groups of five steeping pits, arranged either side of a culvert carrying the resulting alum liquor to a group of three circular cisterns. In these pits the calcined shale was immersed in water to draw out the soluble aluminium sulphate salt in solution. According to a contemporary account, each pit measured 18 yards in length, 5 yards in breadth and 24 inches in depth, increasing in depth to 32 inches at the front to allow for drainage [25]. The sides and the base of each tank were normally composed of stone with an intermediate lining of rammed clay, but the Peak tanks appear to have been lined with deal boards 11 inches in depth and 1½ inches thick [26]. Fragmentary masonry walls can still be traced within the west quarry, indicating the position of the culvert and one of the circular cisterns. Carter's painting also shows two buildings behind the tanks with pantiled roofs. One of these is probably the smithy referred to in an Account of Stock dating from 1838 [27]. In addition it would almost certainly have housed a small laboratory, a tool store and a foreman's office. The second smaller building was probably used as a cottage for housing part of the workforce.

Only one of these buildings is shown on the 1862 plan, suggesting that the cottage was demolished prior to this date. The arrangement of the tanks also differs slightly, with five more tanks added to the south row on the west quarry, but only four shown on the north row. Artistic licence may be suspected, especially as an earlier plan from the mid 1830s [28] shows a single line of fourteen tanks in the west quarry and none in the east quarry.

Whatever the explanation, it is clear from the various sources that after about 1840 the west quarry provided the main source of alum liquor for the boiling house, and possibly the only source after the exhaustion of the east quarry.

The correct specific gravity for the liquor was obtained by mixing the contents of the three circular cisterns. The waste shale from the steeping tanks was tipped from the edge of the quarry, gradually forming two substantial heaps up to 200 metres in length and 50 metres in height. Two 'liquor troughs' are shown on the 1862 plan carrying the alum liquor around the edge of these waste heaps. Part of the west trough can still be traced as stone culvert emerging from the west quarry and continuing as an open gutter beyond the road to Robin Hood's Bay (beneath what is now the track bed of the Scarborough to Whitby railway). Between the two heaps the edge of Blackhead Field is still traceable as a line of trees and running along the east edge of this boundary is an open gutter corresponding with the line of the east trough. Nearer to the quarry traces of a collapsed culvert suggest the initial part of the trough was lined with stone. Also evident between the two heaps is a conspicuous embankment defining the course of the track connecting the quarries with the boiling house. Together with the remains of enclosure walls around the former Blackhead cottages these are important surviving features because they form part of a remnant landscape contemporary with the alum industry but unaffected by quarrying or tipping.

The Boiling House.

This was situated on the cliff top, close to the dock at beach level where raw materials (mainly coal and alkali) were delivered. The boiling process required about six tons of coal to produce a single ton of alum, hence maximum consumption in the 1820s would have amounted to about 3,600 tons annually. It was therefore more efficient to bring the alum liquor down to the boiling house rather than transport the coal up to the quarries.

This convenient arrangement was also characteristic of the boiling house - built on two levels so that where possible gravity was used for conveying the liquor between the various processes (figure 2). The first map to portray this building is Greenwood's county plan (1817), which shows a rather insignificant horseshoe-shaped building, aligned east-west [29]. However, the arrangement surviving today - a roughly rectangular block aligned north-south - is first portrayed on a plan dating from the mid 1830s [30], suggesting that the surviving remains date from sometime after 1817. Initially the alum liquor was stored in a sunken circular vessel known as the Raw Liquor Cistern, which was connected to the end of the liquor trough from the two quarries.

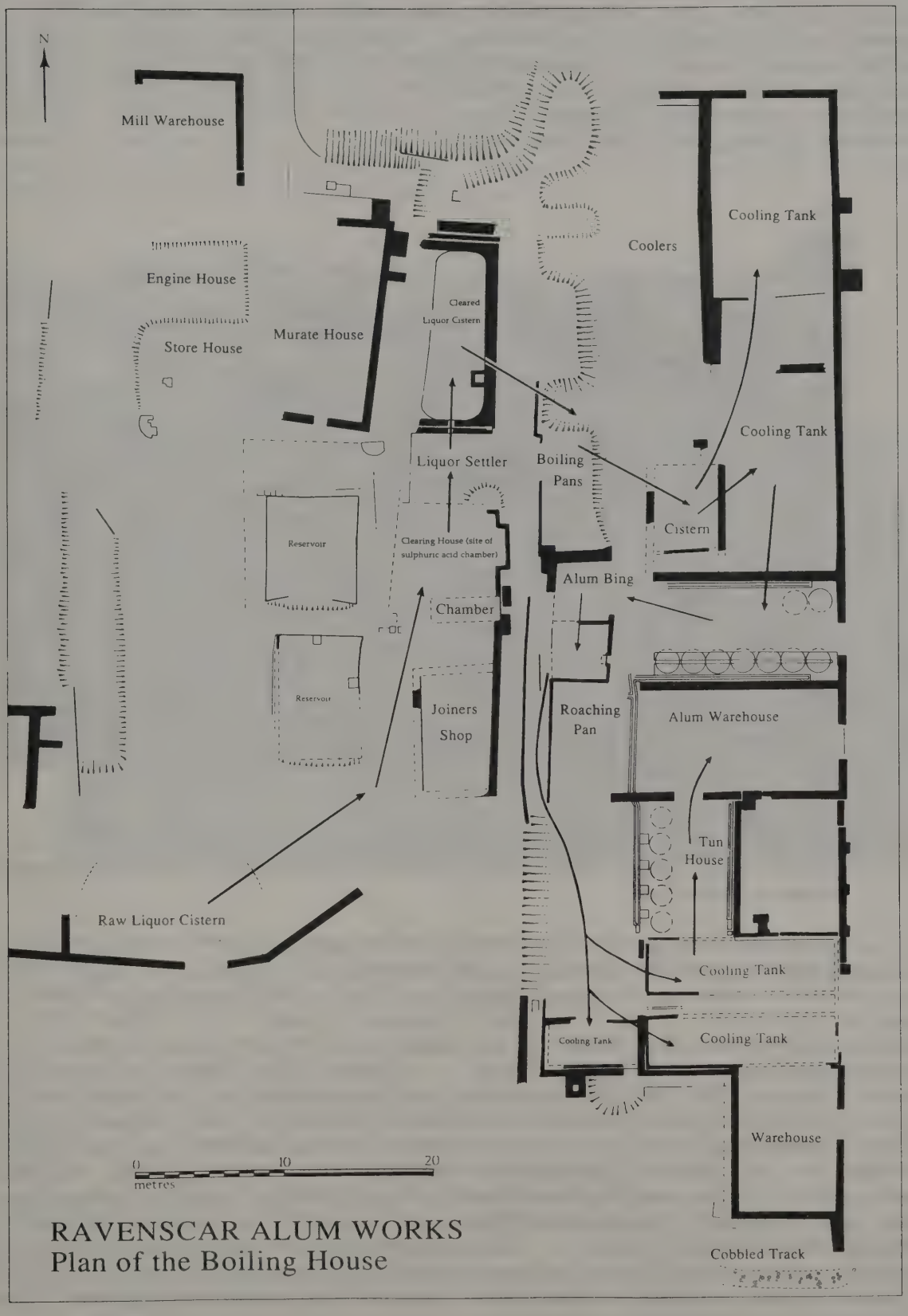

N
Mill Warehouse
Engine House
Store House
Murate House
Cleared Liquor Cistern
Coolers
Cooling Tank
Cooling Tank
Liquor Settler
Boiling Pans
Cistern
Reservoir
Clearing House (site of sulphuric acid chamber)
Alum Bing
Chamber
Reservoir
Joiners Shop
Roaching Pan
Alum Warehouse
Tun House
Raw Liquor Cistern
Cooling Tank
Cooling Tank
Cooling Tank
Warehouse
0
10
20
metres
RAVENSCAR ALUM WORKS
Plan of the Boiling House
Cobbled Track

Figure 2

This cistern was originally enclosed within a building to prevent dilution by rainwater. Close to the cistern are two sunken reservoirs, each approximately 7 metres square, used for storing water which was utilized at a later stage in the refining process (Plate 1). Unlike the circular cistern however these were not enclosed.

Plate 1: The two reservoirs for storing water on the upper platform. This was used for re-dissolving and washing the alum crystals

From the cistern the raw liquor was transferred across to the Clearing House where it underwent an initial clarification process. Map evidence suggests that the Clearing House was built on the site of the chamber used for manufacturing sulphuric acid so that its construction probably dates from sometime after the mid 1830s. Within the Clearing House the raw liquor was boiled rapidly and vigorously in shallow lead pans above a hearth fired with small coal. The object of this first boiling was to concentrate the liquor to sufficient strength to cause precipitation of the waste iron sulphate, otherwise this would discolour the finished alum crystal. In the contemporary accounts this characteristic yellow residue is referred to as 'slam'. Its survival on many of the walls within the boiling house provides useful evidence for identifying which structures actually retained alum liquor during the refining process.

From the lead pans within the Clearing House the boiled liquor passed first to the Liquor Settler, where most of the iron sulphate was precipitated, and then to the Cleared Liquor Cistern. Nothing remains of the former vessel but the cistern (Plate 2) survives as a submerged vessel, built with sloping masonry walls above the boiling pans. In this position it functioned as a retaining vessel for clarified liquor immediately above the boiling pans.

Plate 2: The cleared liquor cistern on the upper platform This held the clarified liquor before it was concentrated by evaporation in the boiling pans

After clarifying, the cleared liquor passed to the boiling pans on the lower platform. The position of these pans is indicated by a raised masonry platform 1 metre in height, now turf-covered but with indentations in the east face suggesting the position of some of the hearth openings. The pans were shallow lead vessels, usually 10 feet in length, 4 feet 9 inches broad and increasing in depth from 26 inches at the back to 32 inches at the front to assist drainage [31]. These pans were suspended on iron plates over a firebrick-lined hearth, fuelled with slack coal. According to the 1838 inventory there were 17 large pans and 13 small pans within the boiling house.

This might explain why the west wall of the Alum Boiler House is slightly indented i.e. to allow for the larger pans close to the Alum Bing and the smaller pans nearer to the plumber's shop.

Nothing remains of the Alum Boilers on the lower level but it is assumed that these generated the steam required for the earlier experimental process of steam evaporation.

The boiling stage, lasting up to 48 hours, was used to evaporate excess water and concentrate the liquor. An alkali was then again added to the liquor with the effect of adding a second salt to the aluminium sulphate, which would increase the capacity of the liquor to hold soluble salts. Until the 1780s this was either ammonia derived from human urine or potassium derived from seaweed ash, but during the 19th century muriate of potassium (potassium chloride) was used at Peak. Robert Campion introduced a degree of horizontal integration to his undertaking by erecting a muriate house for the manufacture of this substance, somewhere on the River Esk between 1834 and 1838 [32]. The Muriate House marked on the 1862 plan acted as a store for the alkali. Its addition to the liquor also resulted in the precipitation of the remaining iron sulphate and for this purpose the hot liquor was passed to an intermediate cistern before its transfer to the Cooler House on the lowest level of the lower platform.

The cooler house contained two substantial tanks, each measuring 13 metres by 7 metres, possibly separated by a smaller intermediate tank. Evidence to be found elsewhere on the site suggests these tanks were built of sandstone blocks 20 centimetres thick, sealed and supported on the exterior face with a rammed clay lining. Due to partial infilling the depth is uncertain but the tanks were no doubt shallow to speed up the cooling rate. For this reason at least six window openings were incorporated into the east wall and these were probably louvred to create a draught over the tanks. The base of this wall also incorporates timber-lined drains which would draw off excess liquor, thus indicating if nothing else the top level of the tanks. Waste residual material adhering to the surface of this drain has been analysed by Leeds University and the results suggest that the material is rich in calcium sulphate, an impurity that would float on the top surface of the liquor as it cooled. This seems to imply that the drains were used as a means of skimming off a second residual impurity.

After cooling the liquor was transferred, probably via an underground culvert, to the first Tun House. This contained two rows of seven circular barrels, positioned on raised masonry platforms running along the length of the room.

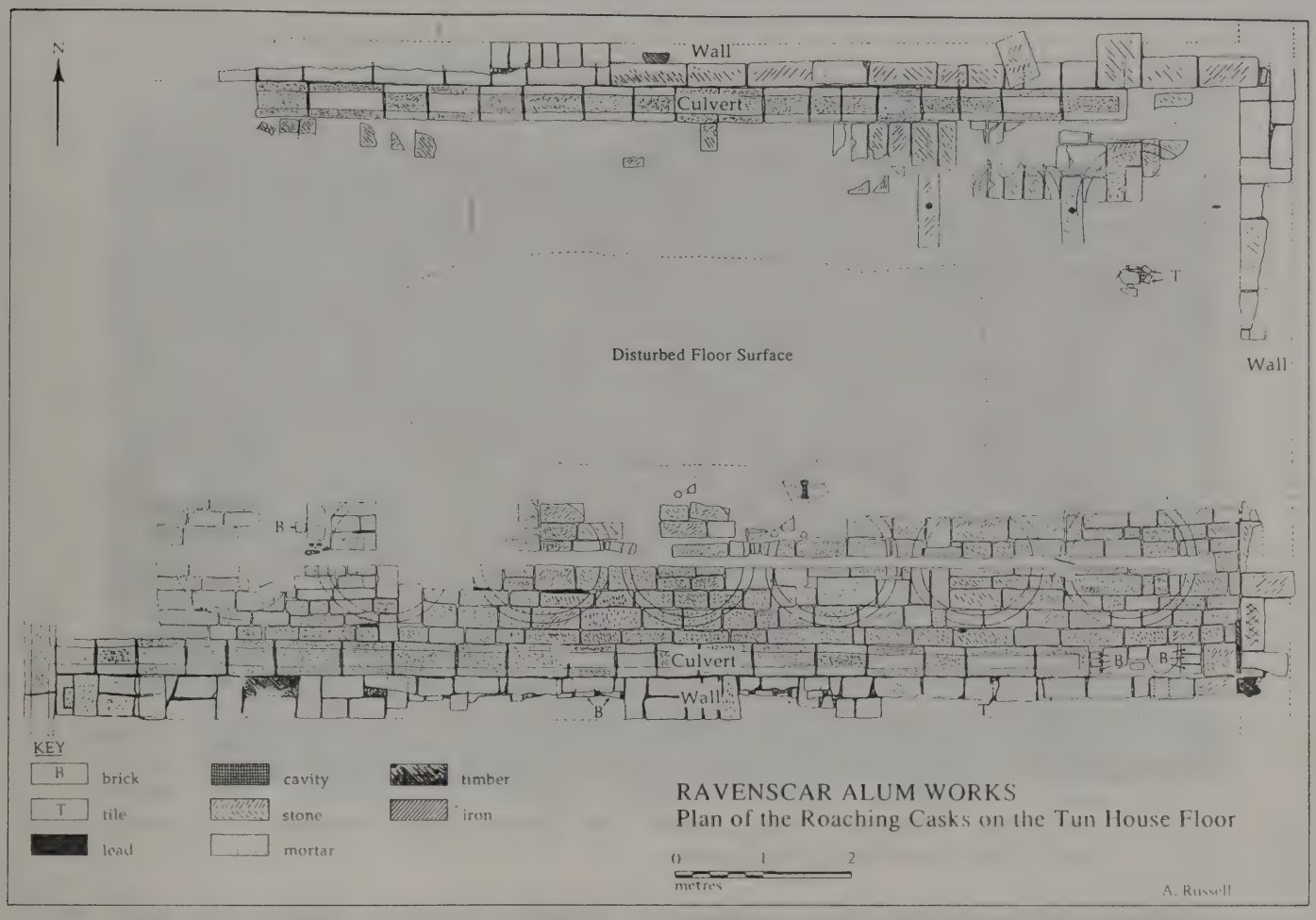


Figure 3

Due to differential bleaching the barrels have left neat circular impressions on the stonework (figure 3), indicating each was composed of staves 11 centimetres thick and had a circumference of 1.5 metres. In these barrels the first alum crystals would begin to precipitate from the liquor around the sides of the vessel. After about four days the barrels were dismantled and the remaining 'mother' liquid was drained into stone culverts at floor level and run back to the boiling pans for re-use (Plate 3). At this stage the crystals retained traces of iron sulphate and were therefore light yellow in colour. To remove this impurity the crystallisation process was repeated. This recrystallisation was known as 'roaching' and involved dissolving the crystals in hot water in the Roaching Pan, probably a large lead vessel suspended on a masonry platform over a coal-fired hearth. Adjacent to the Roaching Pan was the Alum Bing, used for storing the impure crystals. Water for dissolving these crystals came from an underground chamber beneath the Clearing House, which in turn was supplied from the two reservoirs on the top platform.

Plate 3: Looking across the lower platform of the boiling house. On the left are the walls of the plumber's shop and clearing house on the upper platform. The stone culvert (centre) was used for conveying 'mother' liquid back to the boiling pans.

The liquor from the dissolved crystals ran along a shallow stone culvert to the second Cooler House at the south end of the lower platform. This appears to have contained six tanks, each measuring approximately 6 metres in length, 3 metres in breadth and 1.2 metres in depth, defined by thin masonry walls with iron sulphate residue adhering to the interior face. After cooling the liquor was passed to the second Tun House where the second crystallisation took place over a period of ten days in similar, although slightly smaller, barrels to those in the first Tun House. The mother liquid was again run back to the boiling pan after the barrels were broken open to remove the pure white crystals.

Storage and Transport.

The refined alum was ultimately sold as 'alum flour' after it had been washed, dried, and crushed in the warehouses on the lower platform. The crushing was achieved using three pairs of composite French burr grindstones which still remain within one of the warehouses (Plate 4). These may not be in situ because the grinding is more likely to have been carried out in the Mill Warehouse on the top platform, adjacent to the Engine House.

Plate 4: Remains of the grindstones within the alum warehouse. These were used for crushing the refined crystals to form alum 'flour'.

The 1838 inventory includes 1200 'alum bags' which were presumably used for storing the flour. It also mentions 6½ tons of alum in one of the warehouses, valued at £8 10s each, and 62 tons of alum either in casks or bings each with a slightly lower value of £8 5s. indicating that the refined alum in the warehouse had a higher value.

The Mill Warehouse was one of a range of service buildings around the boiling house. At ground level the remains of the Joiner's Shop, Plumber's Shop, Smithy and Laboratory are also traceable, indicating that the works was relatively self-sufficient with regard to producing utensils and equipment (perhaps not surprising considering the isolated location of the site). It was also relatively self-contained with regard to its workforce. The remains of two back-to-back cottages survive close to the boiling house (Plate 5), as does Low Peak House which formerly accommodated the manager of the works.

Plate 5: Remains of one of the worker's cottages close to the boiling house. Low Peak House (background) formerly provided accommodation for the works manager.

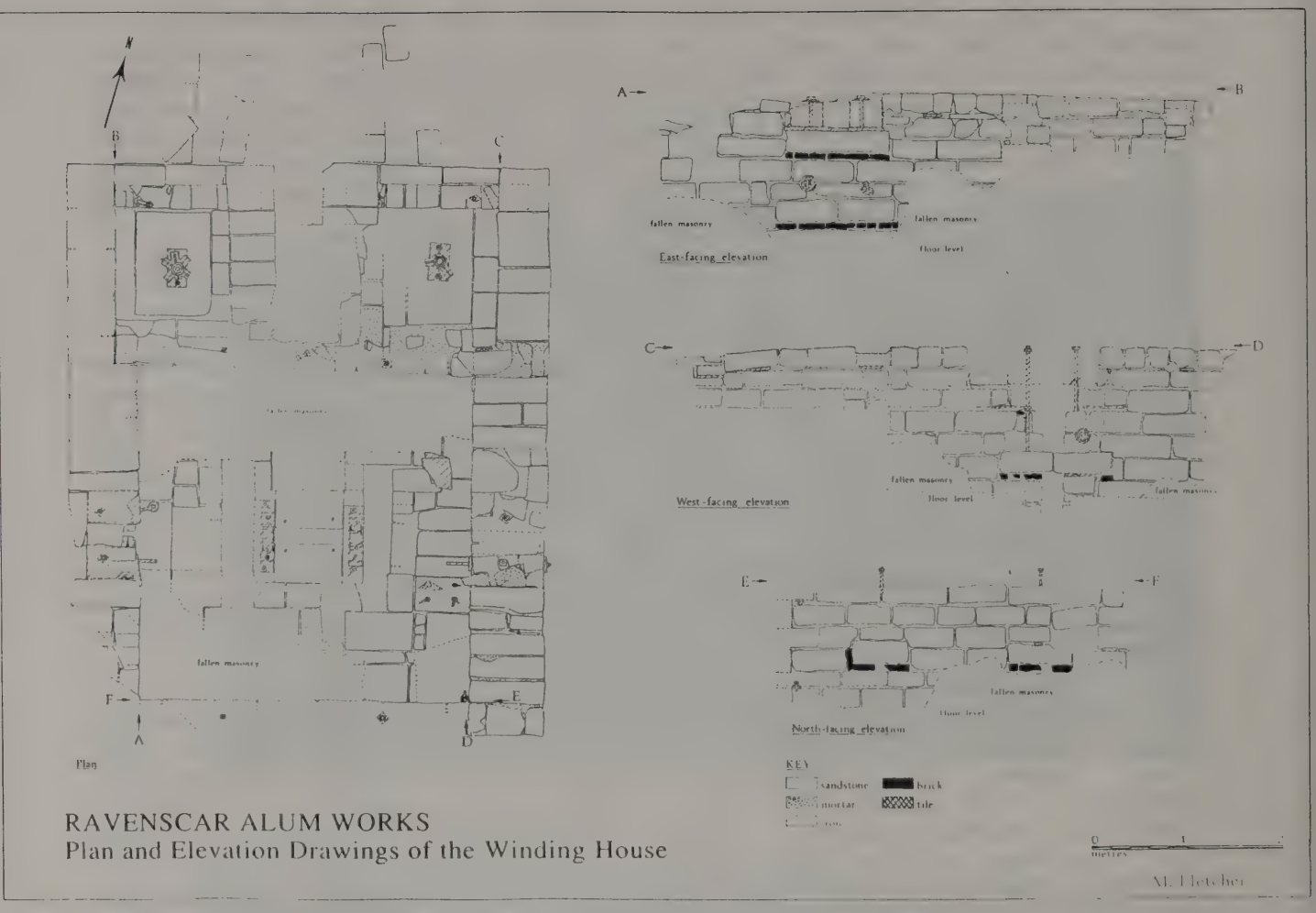
A total of 18 cottages are mentioned in connection with the 1862 sale and these are shown on the accompanying plan, adjacent to Low Peak House and between the two quarries. During the prosperous period of the 1830s Peak probably employed more than 100 people - it was certainly the largest employer after agriculture in the 1851 census - and hence the demise of the industry in the 1860s must have seriously affected the livelihood of many people in the communities of Peak and Stow Brow.

Peak also achieved a degree of self-sufficiency with respect to raw materials and manufactured alum. Due to the remoteness of the site, coastal transport was essential for delivering large quantities of coal from the Durham coalfield. Outward-bound boats destined for the ports of Hull, Newcastle and London with refined alum would return carrying cargoes of urine and timber, iron and lead etc.

As a local shipowner Robert Campion had the advantage of operating his own small fleet to deliver these materials, including the muriate from his works on the River Esk. These cargoes were evidently attractive to Dutch and French pirates, hence the installation of a cannon on the edge of the cliff below the boiling house to act as a deterrent (this has been reliably dated to between 1620 and 1640 i.e. contemporary with the earliest phase of Peak's activities) [33].

Vessels arriving below the boiling house could only berth at high tide. The position of the original dock is shown on the 1862 plan and can still be traced today as an assemblage of post-holes cut into the face of one of the rock scars. These probably supported a simple timber stage surrounded by mooring posts which may have been in use from the start of the 17th century. Sometime after 1849 a more substantial cut was made into the rocks [34] so that boats could reach the foot of the cliff. From the west face of this latter dock two separate 'rutways' have been cut to a shallow depth into the rock [35]. Each has a gauge of approximately 1.2 metres (4 feet) measured between the inner edge of the cuts and served as a means of guiding loaded carts from the dock to the foot of the cliff, either at night-time, or when the tide was rising.

Materials arriving or departing by sea were originally carried between the boiling house and the dock, 70 metres (230 feet) below, by packhorse. The remains of a substantial cobbled track descending the cliff face suggests the route taken by these animals. Their use probably explains the need for the barn on the site, which would have been utilised for stabling and storing fodder. At a later stage however the boiling house was connected with the second dock via an inclined railway descending the cliff at an angle of about 40 degrees. This is shown on the 1862 plan with its top section entering into the coal depot close to the Alum Boilers. The plan shows 'Engine Ropes' emerging from the Engine House but has failed to depict the winding house (figure 4) slightly to the north which would have controlled the rate at which waggons descended. Since the tonnage of materials ascending the incline would exceed the tonnage descending, the Engine House provided the power for raising the additional waggons. Whether or not this was the rather unusual hydraulic beam engine installed by Mr Manwaring in 1812 is uncertain [36]. If so the incline and the engine may be contemporary, although it is more likely that the Engine House contained a 10 h.p. steam engine mentioned in connection with the 1862 sale. Some of the original track still remains in situ on the incline, mostly buried by encroaching turf. This is to form the subject of an excavation in 1991 which aims to assess the gauge and construction of the track and hopefully reveal further evidence about the way in which the system was operated.



RAVENSCAR ALUM WORKS
Plan and Elevation Drawings of the Winding House

Figure 4

CONCLUSION.

Clearly, the surviving archaeological evidence from the Ravenscar alum works effectively illustrates the complexities of a chemical process which cannot be fully understood simply by referring to contemporary descriptions. Despite the comparatively recent demise of the alum industry the intricacies of this process are not fully understood. This is partly due to the fact that each works developed and adapted its own technology in an attempt to survive within a highly competitive industry. Therefore, in the case of the Peak Works it is only by matching documentary sources, especially contemporary plans, with the remaining physical evidence that one can visualise and comprehend both the technology involved, and its impact upon the surrounding landscape. If nothing else it is these two factors which seem to justify the undertaking of the National Trust to record, conserve and ultimately present this important industrial monument to the public.

It should be stressed however, that the author puts forward this account with some hesitation. Substantial gaps remain in our knowledge of the operational history of the Peak Works. We also know very little about the chronological development of the boiling house or any of the related features, some of which may date back to the early 17th century. Without doubt the remains of the boiling house,although fragmentary, provide answers as to the technology involved, yet because the basic sequence is not fully understood the author must qualify the accuracy of this account and stress that it is a tentative interpretation based on existing knowledge. A limited excavation programme has been devised to examine and record the condition of structures known to remain in situ, notably the liquor cistern on the boiling house and the surviving track on the cliff-top incline. Further evidence arising as a consequence of the Trust's consolidation and maintenance programme will almost certainly result in a revision of the present interpretation regarding the site's operation.

REFERENCES.

1. YOUNG, REV. G., 1817: A history of Whitby and Streoneshalh Abbey, p.810

2. TURTON, R.B., 1938: The Alum Farm, p.191.

3. Articles of agreement transcribed in the Burnett papers, Whitby Literary and Philosophical Society Library (W.L.& P.S.L) No.1221.

4. MORRISON, A., 1981: Alum, North East Yorkshire's fascinating story of the first chemical industry, p.18.

5. WATSON, W.,1854: The Visitor's guide to the Guisborough Alum Works, p.17.

6. Register of deeds vol. AY p.465 no.789 North Yorkshire County Record Office (N.Y.C.R.O.)

7. York Courant, 10th February 1784.

8. MORRISON, p.20.

9. YOUNG, p.817.

10. Information extracted from an advertisement for the lease of the Stow Brow Alum Works (c.1835). The original is held by the Doncaster Record Office (D.R.O.) no.1330.

11 Ditto

12. WATSON, p.57.

13. This chamber and furnace is mentioned in particulars relating to the sale of the Peak Alum Works (1834). D.R.O. no.1330.

14. See reference 10.

15. BURNETT papers no.6666, W.L.& P.S.L.

16. Ditto no.5301.

17. Ditto no.6618.

18. Ditto no.6618.

19. Ditto no.5301.

20. Ditto no.6623.

21. Ditto no.3371.

22. N.Y.C.R.O. ZW(M) 1/85.

23. This painting belongs to a private collection and for copyright reasons has not been reproduced.

24. BURNETT papers no.6619.

25. WATSON, pp.48-50.

26. BURNETT papers no.6613. This account of stock includes varying lengths of deal at 'Rock Heap Side' which was an alternative name for the quarries.

27. BURNETT papers no.6613.

28. D.R.O. no.1330.

29. GREENWOOD, C., 1817: Map of the County of York.

30 D.R.O. no. 1330

31. YOUNG, p.812.

32. BURNETT papers no.5301.

33. The author is grateful for the assistance of Mr. Bill Brookes of Hunmanby regarding its identification.

34. This second dock is not shown on the first edition Ordnance Survey plan (1:2,500 scale) surveyed in 1849.

35. First identified by John Owen. See OWEN, J.S.: Trackway Transport on a Tidal Foreshore, in Stephenson Locomotive Society Journal, vol.64, no.733, Sept/Oct 1988.

36. A description and section drawing is given in the Transactions of the Society for the Encouragement of the Arts (1826).

EXCAVATIONS AT 10/10A ST. SEPULCHRE STREET, SCARBOROUGH.

BY CHRISTOPHER HALL.

INTRODUCTION

During the long weekend of 29th April/1st May 1989, the Society excavated two trenches in the rear garden of this property. These excavations which were made possible due to building works at the property, were carried out at the request of the owner.

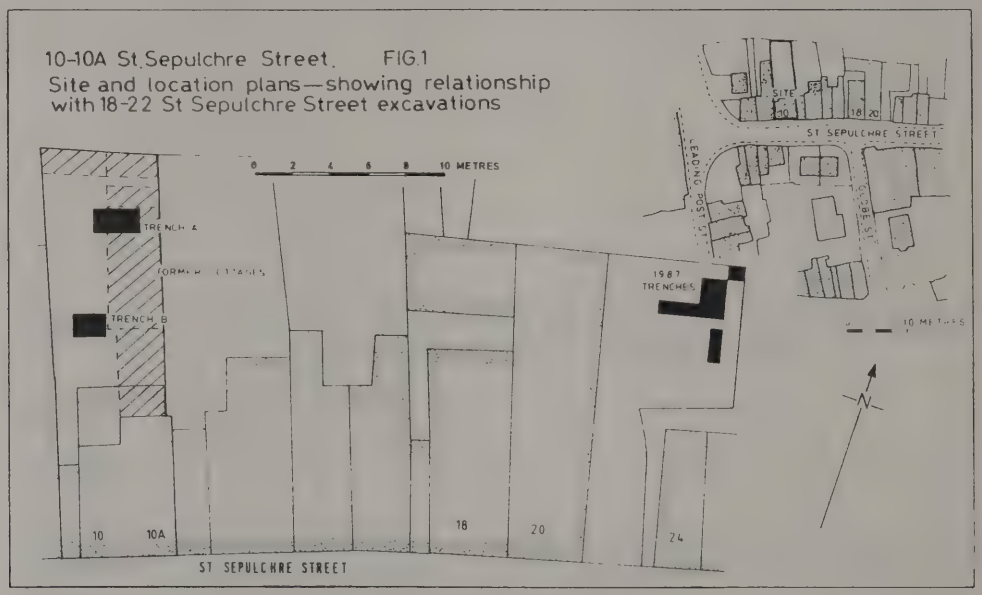


Figure 1

No. 10/10A St. Sepulchre Street is on the north side of the road (Fig. 1). It is a late 18th/early 19th century town house [1] which was divided into two cottages in 1906. Access to the back garden is by means of a narrow covered passage through the west side of the building, and until relatively recently this gave access to a narrow yard or lane, known as Tinsley's Yard, fronting a terrace of three small cottages. It was hoped that the excavations would cast some light on the date of building of these cottages and thus give some indication of the period during which pressure on the land in the old town was such as to necessitate the infilling of plots behind more substantial houses. Cossins' map of 1725 [2] shows the presence of an orchard in the back garden, but the accurate representation of individual properties on this map must be doubtful. Certainly by the time of Wood's map of 1828 [3], the cottages were in existence.

Additionally, the excavation was seen as an adjunct to the work carried out by the Society at 18-22 St. Sepulchre Street, Scarborough in July 1987 [4] where it was hoped to establish the relationship between the Franciscan Friary precinct wall, the alignment of St. Sepulchre Street and the intervening buildings. The relationship between the present site and the trenches at 18-22 St. Sepulchre Street is shown on Figure 1.

ARCHAEOLOGY.

Two trenches were excavated (Fig. 1). Trench B, measuring 2.0 metres by 1.5 metres and located 3.4 metres away from the house was excavated to a maximum depth of 1.5 metres. In this trench an area of severe, relatively modern disturbance was encountered down to the full depth. This disturbance was possibly associated with earlier building works on the house and no further archaeological interpretations can be gleaned from this aspect of the excavation.

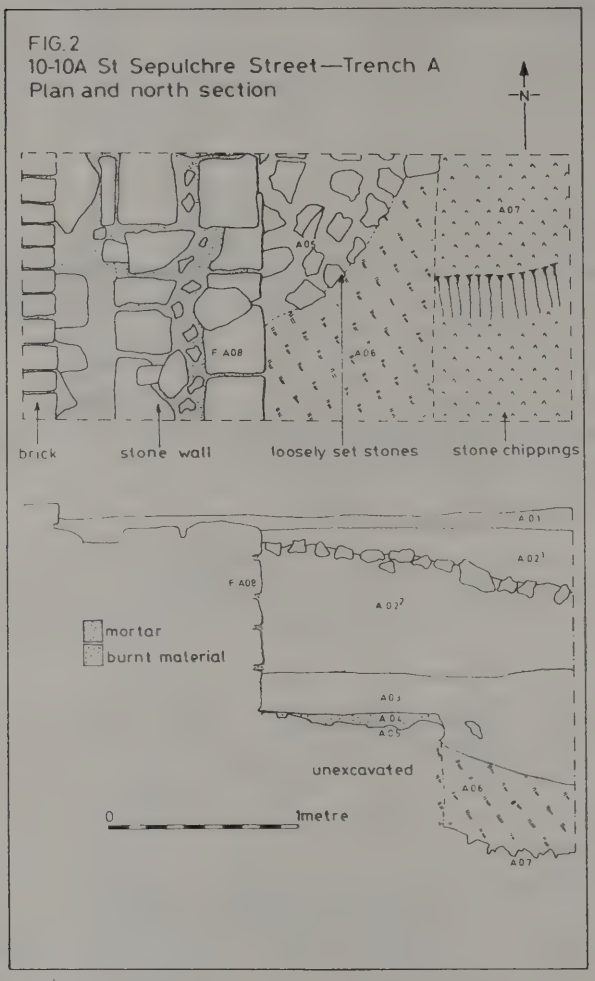
Trench A, measuring 2.9 metres by 1.4 metres was located towards the extreme northern end of the garden and was excavated to a maximum depth of 1.8 metres. The following phases were recognised (Fig. 2):

Phase 1 (A07) - a layer of stone chippings intermixed with mortar flecks and lumps in a sandy/clay matrix. This material was recognised as being similar to the Phase 2 layer encountered at 18-22 St. Sepulchre Street in 1987 [5] where it was concluded that such a deposit could be derived from either the construction or demolition of a mortar bonded stone structure. At 18-22 St. Sepulchre Street it was felt that the latter was the more likely, due to the presence of green glazed floor tiles with mortar adhering to them. No such tiles were encountered at the present site, however.

Phase 2 (A06) - is also directly comparable with 18-22 St. Sepulchre Street, being a dense, compacted green/grey layer with high humus content. No artefacts were recovered and as at 18-22 it probably means the site was abandoned to natural vegetation following the demolition episode in Phase 1.

Phase 3 (F. A08) - apparently built directly off the compacted green-grey layer was a massive stone wall of coursed, generally squared block work set in mortar (Fig. 3), the course heights varying between 150mm and 200mm. A small fragment of plaster survived on the face. This wall appeared to be the outer leaf of a very much thicker rubble-filled wall, but as it was considered neither possible nor desirable to remove this structure its true founding material, its full width, its date and use remain tentative. It is almost certain that a wall of this size and quality of construction would not have originally been built as part of the modestly sized cottages.

However, it is likely that the wall would be used as a foundation course for the later buildings.



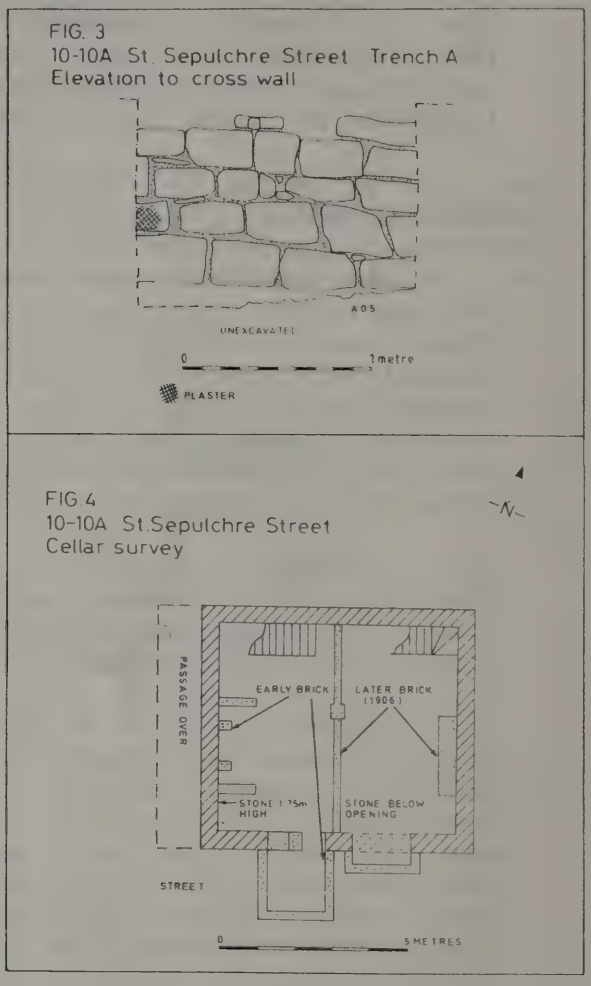


Figure 2 **Figures 3 and 4**

Phase 4 (A05) - consisted of a series of stones partially cut into and partially loosely set into the green/grey compacted layer and forming a roughly semi-circular shape against the stone wall. These stones were topped by a dark ashy layer (A04) to a maximum thickness of 300mm and this may represent a hearth butting up against the wall, although no burning was apparent on the masonry itself.

Phase 5 (A03) - a thick deposit of mid-brown soil incorporating patches of charcoal was dumped on top of the humus and hearth. This layer yielded a small amount of predominantly (but not entirely) medieval pottery, i.e. 37 sherds out of 39, and appears to represent a casual dumping of rubbish against the stone wall.

Phase 6 ($A02_2$ and $A02_1$) - consisted of an extremely thick layer of light brown soil containing a substantial quantity of pottery and butchered bone. The upper layer (sub-referenced $A02_1$) is the same material separated from the lower stratum by a scatter of stones. Devoid of pottery, this upper layer appears to represent a very slightly later phase of the same sequence of dumping, which seems to have taken place from the west. A preliminary examination of the pottery suggests an 18th century date, and the presence of fragments of limestone roof tile indicates that this phase was associated with the demolition of a building and levelling of the site, possibly as a preliminary to the erection of the cottages.

Phase 7 - the uppermost layer (A01) represents the relatively recent accumulation of soil.

CELLAR SURVEY (Fig.4).

As part of the assessment of the site, the cellars of Nos. 10 and 10A were investigated.

The four main walls were constructed in squared coursed stone. The stone walls rise to the full height of the cellar i.e. 1.75 metres, the junction between the stonework and the brickwork of the house above lying at ground floor joist level. The appearance of the cellar stonework bears some resemblance to the wall found in Trench A and, as in the case of that structure, the course heights varied between 150mm and 200mm. Brickwork had been inserted in two phases.

i) The early phase consists of the west chimney breast and two areas excavated under the street, one a 'coal hole'and the other possibly the foundations to a bay window which existed here. These sections seem to have been cut through the stonework.

ii) The later phase was part of the alterations of 1906, principally the cross wall and a chimney breast.

The cellar does not extend below the passage and it is suggested that this, along with the sections cut through under the street, indicate that this part of the structure pre-dates the present house.

There are strong similarities between this cellar construction and that surveyed at 18-22 St. Sepulchre Street [6].

DISCUSSION

It has already been noted that there are similarities between Trench A and the results of the 1987 excavation at 18-22 St. Sepulchre Street some 30 metres to the east. At both sites an horizon of stone chippings and mortar fragments was found overlaid by a compact layer of humic soil devoid of artefacts which in turn was buried by dumps of earth in the 17th or 18th centuries. It was concluded that the 1987 trench must have been located within the precinct of the medieval Franciscan Friary which occupied 3¼ acres of land between St. Sepulchre Street and Longwestgate. The demolition of buildings following the dissolution of the Friary in 1536 was thought to be the most likely derivation of the stone chippings and broken floor tiles encountered in 1987, and a similar explanation is likely for the layer of mortar and stone fragments (A07) found in Trench A. This would mean that the Friary's boundary wall must have crossed the present site somewhere to the south of Trench A. As in 1987, the overlying humic soil (A06) points to the abandonment of the area following the dissolution until the yard at the rear of 10/10A St. Sepulchre Street (as at 18-22 St. Sepulchre Street) was extended into the former Friary grounds in the 18th century. This episode is represented by deposits $A02_1$, $A02_2$ and A03 dumped to raise the ground to the same level as the street.

The one major difference between Trench A and the 1987 excavation is that nothing was found in 1987 to compare with the wall F.A08 either in size or date. This wall was built after the dissolution of the Friary since it overlies the demolition layer A07 and before the 18th century because the levelling deposits at that time largely buried the wall. An isolated fragment of wall plaster adhering to one of the stones suggests that the stones were probably re-used from an earlier structure, presumably one of the Friary buildings. As yet one can only speculate as to the function of the wall. Its massive construction and its association with a semi-circular hearth suggest it was part of a building rather than a simple boundary wall, and its apparent similarity to the stone cellar walls at 10/10A St. Sepulchre Street could point to their being contemporary. One can envisage that the sudden availability of building stone following the dereliction and destruction of the Friary must have occasioned much new building along St. Sepulchre Street in the latter half of the 16th century.

Little was discovered about the row of cottages known as Tinsley's Yard beyond that they must have been constructed some time after the 18th century levelling episode. The brick wall of one cottage rested on wall F.A08 but this does not imply that the cottages were in any way successors to the earlier stone building, but rather that the cottage builders simply made use of an existing solid foundation.

ACKNOWLEDGEMENTS.

The site owners Peter and Marilyn Bland are thanked for giving permission to excavate and for their encouragement during the work. Members and friends of the Society who helped with the excavation were Patrick Argent, Dorothy Chaplin, Ron Davies, Norman Murphy, Trevor Pearson and Wally West. Trevor Pearson commented on the draft of this report.

REFERENCES.

1. Statutory List of Buildings of Special Architectural or Historic Interest. Borough of Scarborough. D.o.E. 1972.

2. COSSINS, 1725 'A New and Exact Plan of Scarborough'

3. WOOD, J.,1828 Plan of the Town and Environs of Scarborough,

4. HALL, C.& PEARSON, T., '18-22 St. Sepulchre Street; An 1988 Archaeological Evaluation',

5. HALL, C.& PEARSON, T., Op. cit.

6. HALL, C.& PEARSON, T., Op. cit.

PROBATE INVENTORIES AND RURAL ECONOMY IN NORTH-EAST YORKSHIRE 1650-1800

BY PHILIP CRAVEN

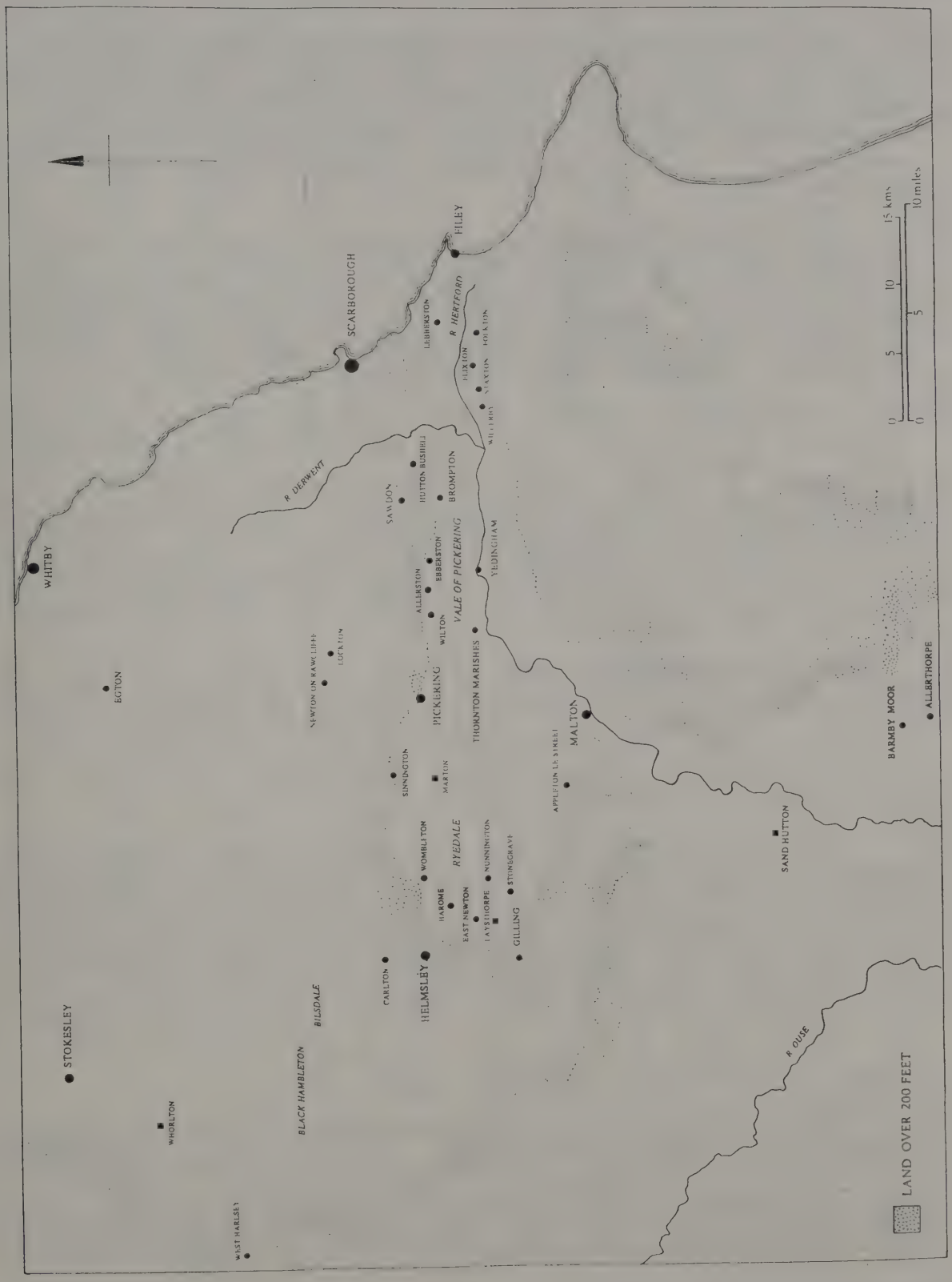
There are few literary sources for the economy of the region until Arthur Young in 1771 [1], followed by William Marshall in 1787 [2], reported on the husbandry and farming practices of north-east Yorkshire. More than two centuries earlier John Leland in the course of his Itinerary (1535-1543) had journeyed from Scarborough to Pickering and recorded the brief observation: "Thens to Pykering: and moste of the ground from Scardeburgh to Pykering was by hille and dale meate plentifull of corn and grass but little wood in sight" [3].

In or about 1724 Daniel Defoe during his Northern Tour visited the port of Hull and, noting the considerable trade in both imports and exports there, commented: . . . "the butter of the East and North Ridings and the cheese from Staffordshire, Warwickshire and Cheshire are shipped off here" [4]. He might have added that much of the butter was destined for the London market, a commercial activity later described in detail by Marshall and clearly of some importance earlier in the century.

From Hull Defoe rode to Scarborough where he saw the castle "ruined in the last wars [Civil War] and a great deal of company drinking the waters." He was more complimentary about the public buildings than Arthur Young was to be some years later and he commended the fish . . . "in particular here we saw turbets of three quarters of a hundredweight, and yet their flesh eat exceeding fine when taken new" [5]. From Scarborough Defoe travelled to Stockton but offered no comment on the country in between except to remark on the "vast quantity of black cattle sold at Northallerton, there being a fair once a fortnight" [6].

Young, in 1771, followed Defoe in that he made for Scarborough after surveying the husbandry of the East Riding. He described the road between Beverley and Driffield as being "much the best turnpike road I have met with in Yorkshire" [7]. Although admiring Scarborough's romantic setting he was less enthusiastic about its public buildings, describing the Long Rooms as "paltry holes" [8].

Leaving Scarborough he paused briefly at Brompton and again at Yedingham and noted that farms in that area would consist of two thirds grass and one third arable; they would carry about 15 cows, 10 head of young stock and about 80 sheep [9].



North-East Yorkshire: showing principal places mentioned in the text.

At East Newton and Laystrop [Laysthorpe] in Ryedale he wrote that farms of 150 acres there would have no more than 30 acres under the plough, that they would be stocked with upwards of 20 cows, the same number of young cattle and about 140 sheep. He added: "They reckon a dairymaid may, without help, manage 10 cows, but it is very hard work; generally a maid and a girl to 15 cows" [10].

The onerous nature of a dairymaid's work lay not only in feeding and hand milking the cows in her care but also in converting the milk into butter or cheese; the cream from about two and a half gallons of milk was required to make one pound of butter and one gallon of milk made approximately one pound of cheese - formulae which remain virtually unchanged.

There were, indeed, farms with upwards of 20 cows as described by Young but they were the exception rather than the norm. Examination of more than one hundred inventories of yeomen and husbandmen dating from 1690 to 1740 shows that only two farms carried twenty or more cows. In 1690 Robert Newsham of West Harlsey, Cleveland, died, leaving 21 cows, and in 1736 the inventory of John Baker of Wilton, Pickering Lythe, records 20 cows. The average size of herd for the whole group was exactly five cows.

From Ryedale Young made his way into Cleveland "across the moors they call Black Hambledon" which he thought a desolate place. He admired the view from the escarpment over the Cleveland Plain but the descent through Scarth Nick seems to have alarmed him and he advised any friend "to go an hundred miles about to escape it" [11].

Young's contemporary and, it could be said, rival, William Marshall - they were the principal agricultural writers and critics of the period - spent several months in Yorkshire in 1782/3 and again in 1787 gathering material for his survey. As a result his work is more detailed, more fully described than that of Young and his conclusions more soundly based. He had the advantage, too, of being native to the area, though for most of his life he lived and worked outside the county. He was born in 1745 at Sinnington in Ryedale, the son of a yeoman farmer, and died at Pickering in 1818 [12].

Where Young had given examples of farms which were predominantly pastoral, Marshall, more comprehensively, stated that it was "a District where grassland abounds" [13] . . . and that "the primary object of the Vale husbandry is butter" [14]. "Great quantities of butter are annually sent out of the Vale; many thousand firkins are sent from Malton" [15].

The Derwent, in or about 1723, had been made navigable from its confluence with the Ouse to Malton [16]. As a result Malton became, in effect, an inland port, and trade steadily increased throughout the rest of the century. "By 1793 thirty-five vessels and two sloops regularly journeyed between Malton and Leeds or Hull [17].
Six years earlier Marshall had recorded that Malton was the "principal market for horses, corn, butter and bacon; oats, ordinary butter and bacon find a market in West Yorkshire but prime butter and some bacon travel via Hull to London" [18]. Commercial activity on the river remained at a high level until the opening of the York-Scarborough Railway in 1845 but rapidly declined thereafter. Throughout the 1830s the navigation was carrying "corn, butter, hams and other kinds of provisions .. .. for Hull, Leeds, Halifax and other places; and from Hull articles of grocery are brought back, and coal and woollen cloth from Leeds" [19].

Important though Malton may have been as a market centre it had no monopoly of the trade in butter and other farm produce. In 1811 exports by sea from Scarborough included "corn, butter in firkins, hams, bacon and salt fish" [20]. Six years later the Reverend George Young would write: "In the immediate vicinity of Whitby , a remark which applies also to Scarborough, many cows are kept to supply the town with milk; at a greater distance, the most marketable part of the produce of cows is butter, which in spring is sold fresh, and in summer and autumn is chiefly salted in firkins: this firkin butter was once a great article of commerce at Whitby" [21].

Two hundred years before Thomas Hinderwell and George Young wrote their respective histories Scarborough was active in shipping butter to London, although on one occasion during the English Civil Wars it was prevented from doing so. "Something over 1,000 firkins of butter [25 tons] was seized at Scarborough by the Parliament forces in 1648, and afterwards paid for because the owners were well affected to that side of the dispute" [22]. In 1684 Hull sent no less than 23,231 firkins of butter to London. Scarborough despatched 2,665 firkins in the same year [23].

Salting butter in order to preserve it for consumption during the winter months, when little milk was available for conversion into butter or cheese, was common practice throughout the country. Marshall of course alludes to it. "The first made butter - that made in early spring - is sent to market. Butter made from the end of May to the beginning of November is sold in firkins and sent out of the district" [24].

Much earlier Edward Lisle of Crux-Easton, Hampshire, had written: "Farmer Moseley of the Isle of Wight, and his wife, being at Crux-Easton anno (1698) they gave me the following account of a dairy . . . if a cow yields 70lbs of butter to be potted . . . it is what is commonly expected, besides which, there is the May butter, for in the Island they begin not to pot till June . . . therefore good housewives collect butter and salt and pot it" [25].

The production and marketing of butter and to a lesser extent cheese - Marshall thought the cheese of Ryedale almost equal in quality to that of Gloucestershire - appears to have been well organised. "The fraternity of cheesemongers in London have agents placed in different parts of the country . . who probe and examine every firkin . . . " [26]. The heavily salted butter was pressed into firkins which were first scalded and then had additional salt strewn around the inside. "Cleanliness," said Marshall, "is the basis of good management" [27].

The firkins were made locally from ash, were bound with hoops of hazel and held 56lbs of butter. In the 1780s this butter was selling at from 28s to 32s the firkin [28]. On this basis the wholesale price per pound was about 6½d. What of the retail price? In 1771 Arthur Young had noted that the price of butter in Ryedale was 7d for 20 ounces [29]. John Tuke, in 1800, stated that "the pound of butter in the Riding varies from 16 to 24 ounces" [30].

It is to be expected that the retail price of butter in London would be higher than that obtaining in Ryedale, and so it was, but the difference was by no means excessive. In 1779, London journeyman saddlers applied to Middlesex Quarter Sessions for an increase in wages and in support of their claim quoted the average weekly expenditure of a London working man with a wife and two children. Their diet included coarse beef, tea, sugar, bread, cheese and 3lbs of salt butter at 8d a pound [31]. The difference between the wholesale price in Ryedale and the retail price in London was not unduly large and, clearly, the butter factors and retailers were working on fairly small margins.

There is little doubt that the sale of butter and cheese contributed significantly to the incomes of the region's farmers in the 18th century, although on the moorland fringes sheep were probably of equal importance and in writing specifically of Cleveland, Marshall observed:

"The objects of husbandry are corn, butter, bacon, cattle and horses, varying little from the Vale of Pickering except more a corn country" [32].

Cleveland, with its heavy soils favouring the cultivation of wheat, was rightly described by Marshall as "good wheat and bean land", [33] a description which still applies to heavy soils.

> Cleveland in the clay,
> Bring in two soles
> And carry one away. [34]

Ryedale, on the other hand, was noted for growing good crops of high quality oats which were much sought after in the West Riding.
"The manufacturing parts of West Yorkshire use principally oaten bread and new oats are coveted for oatmeal" [35]. John Tuke, writing at this period, commented: "Oats are very much grown throughout the whole arable part of the North Riding, and particularly in Ryedale, that district being as remarkable both for the quantity and quality of its oats as Cleveland is for that of wheat" [36].

Rye, too, was cultivated as a bread corn but on a diminishing scale and by the close of the 18th century it was restricted to the poorer soils on the margins of the moorlands. Where rye was grown it was frequently blended with wheat, the mixture being known as 'maslin' or 'mashelton' and Tuke was of the opinion that "a more wholesome and nutritious bread cannot be used" [37]. Clearly the economy of the region, as described by Arthur Young and William Marshall, was already established before they embarked on their respective surveys in the last quarter of the 18th century. But for how long had the husbandry which they described been practised and what sources exist for the study of the rural economy of the 17th and 18th centuries? Fortunately we have in the county a unique class of records covering this period, namely the probate inventories, of which many hundreds have survived. For the purposes of this investigation more than 150 inventories have been examined, dating from 1551 to 1783. Most are of yeomen and husbandmen; widows and tradesmen - both groups frequently farmed in a small way - are also represented. The bulk of the inventories studied, however, cover the years 1680 to 1730; relatively few are earlier than 1680.

Until 1858 wills were proved in the ecclesiastical courts and the probate court required, along with the will, a true and perfect inventory of all the goods and chattels of the deceased before granting probate. Inventories were taken and the goods valued or appraised by neighbours of the deceased, usually four in number. They seem to have exercised prudence in their valuations. Household goods and chattels, husbandry gear, dairy utensils and provisions - where these are recorded - appear to have been given no more than a nominal value and the most valuable asset, livestock, and in particular cattle, were given a value somewhat below the market price ruling at the time.

Two examples of a cautious approach by the appraisers may be cited. The inventory of John Wilkinson of Allerston, who died in 1782, included 10 cows which were valued at £4 each. William Jowsey of nearby Wilton, who died a year earlier, left 3 cows valued at £5 each. For the 1780s William Marshall stated that the average price of a cow and her calf was £8 [38]. Elsewhere he placed the value of a calf at around 15s 0d. The true value of the cows left by John Wilkinson and William Jowsey on this basis was about £7.

Some inventories provide valuable information about the living accommodation in that they name each room when listing its contents. The basic farmhouse of the period consisted of forehouse, parlour, milkhouse - sometimes called dairy or buttery - and chamber. Two parlours or two chambers are not uncommon and, very occasionally, three parlours or three chambers are mentioned; single storey houses having no chamber also occur. Where two parlours are recorded they are often designated high and low parlour, upper and lower parlour or, in the inventory of Thomas Wilkes of Moorhouses, Helmsley, who died in 1719, parlour above the forehouse and parlour beneath the entry. From the evidence of the inventory the house of Thomas Wilkes was single storey as there is no mention of a chamber. His dwelling then comprised parlour, forehouse, cross passage, or entry, and parlour all in line. This layout is typical of the traditional longhouse. There is evidence that the low parlour, or parlour beneath the entry, was originally a cow byre sharing a common entrance with the house part, but by the end of the 17th century the byre end had been converted to other uses [39].

At least two other inventories of the period reveal that the low end of the house in each case, though not housing cattle, was used for non-domestic purposes. Robert Hardwick of Marton, Ryedale, who died in 1692, left 'hay in the low end of the house', and Henry Wilson of Pickering, who died in 1715, had 'in the low end of the house one old loom and yearne'.

Of other rooms recorded in the inventories 'Hall' appears twice, 'kitchen' five times, 'malt chamber' and 'brewing kitchen' once each. In the inventory of William Harker of Whorlton (Cleveland) dated 1728, we find written: "In the forehouse or first room . . . " but in the inventories of Francis Nendick, Pickering, 1557, Robert Goodricke, Gilling (Ryedale), 1690, and John Sturdy of Wombleton (Ryedale), 1691, a different interpretation is placed upon the meaning of forehouse and it becomes 'firehouse'.

The farm buildings most frequently mentioned are the barn and the helm (hovel in southern England). This was a more temporary structure of timber, open at the front, having a flat roof, and housing either livestock or farm implements.

It served a dual purpose, the flat roof acting as a staddle, or base, for a stack of corn, peas or beans.Its versatility is confirmed in some of the inventories. John Baker, yeoman, of Ebberston (Pickering Lythe) in 1673, left 'corn on the helm', John Stockton of Pickering, in 1720, had 'beans on the helm', and in 1701 Richard Bowes of Stonegrave in Ryedale left estate valued at £282 7s 0d including: 'in the helm 3 waggons, 3 coupes [carts] with plowes, harrows and other husbandry implements, £28'.

> Stack pease upon hovell abrode in the yard,
> to cover it quicklie, let owner regard:
> Least Dove and the cadow [jackdaw] there finding a smack,
> with ill stormie weather doo perish thy stack. [40]

From the information provided by the inventories the system of husbandry as described by Arthur Young and William Marshall was already established throughout north-east Yorkshire by the middle of the 17th century. That 1,000 firkins of butter could be assembled in Scarborough in 1648, for shipment to London, is further evidence that the local farmers were actively engaged in producing and marketing dairy produce, particularly butter.

The inventories reveal a wide variation in asset values. A net estate of £30 or less was not uncommon; at the other extreme a significant number of yeomen left household goods, livestock and husbandry gear considerably in excess of £100. The standard of living of a particular household may be judged by the quantity and variety of the domestic goods and chattels recorded in the inventory.

None of the inventories record farm size but a minority give the area under corn either in acres or by the oxgang. This last was a variable unit but it may have averaged about 12 acres. Where corn was assessed by the oxgang it was an almost certain indication of open field husbandry, but where corn was recorded in acres it could refer to open field, enclosure or, as the inventory of John Lyth of Newton-on-Rawcliffe, Pickering, makes clear, a mixture of both.

The relevant entry reads: "3 acres of winter corn and 4 acres of oats and peas in the field; 3 acres of oats and peas in the closes". The inventory is dated 1 September 1767; the open fields of Newton-on-Rawcliffe were enclosed in 1795/6 [41].

Extracts from four inventories where corn was assessed by the oxgang may be cited; all are from parishes or townships in the extreme north of the East Riding and having as their boundary the River Hertford which here separates the North and East Ridings.

The inventory of William Hall of Folkton, which is dated 2 October 1689, records four oxgangs; that of George Long of Staxton, dated 28 April 1690, five oxgangs.Thomas Tranmer of Willerby, whose inventory bears the date 19 October 1697, left three oxgangs of corn, and on 28 January 1729 six oxgangs of corn were recorded in the inventory of John Colley of Flixton. These parishes and townships remained open until the first decade of the 19th century [42].

Thomas Tranmer left a net estate of £33 6s 4d and this included "all the household goods in the house and parlour £6 15s 4d "and, uniquely, "A waine of furniture £2". It is more than possible that the last item may have some connection with the ancient custom of the 'Bride Wain'. We are indebted to William Marshall for a description of this archaic ceremony.

"A carriage loaded with household furniture and utensils travelling from the bride's father's to the bridegroom's house. Formerly, great parade and ceremony were observed on this occasion. The wains were drawn entirely by oxen, whose horns and heads were ornamented with ribbons. Ten or perhaps twenty pair of oxen have, on great occasions, assisted in drawing a bride wain . . ." [43].

Marshall's use of the word 'formerly' seems to imply that the custom was obsolete when he described it in 1787.

The inventories which follow illustrate the variations, mentioned earlier, in estate values; they may also have some bearing on the level of skills of the husbandmen in question.

Will: John Baker the elder late of Wilton in Pickering Lythe in the parish of Ellerburn (Deanery of York) Execution granted to Richard Baker his son and sole Executor.

A true and perfect inventory of the goods and chattels etc. whereof John Baker the elder of Wilton dyed possessed valued and appraised this 16 day of July 1736 by us whose names are subscribed.

		£	s	d
Imprimis	His purse and apparel.	50	0	0
Item	In the forehouse a table a form a dresser a clock a cupboard three chairs two forms and other implements.	4	0	0
"	Nine or ten pewter dishes and plates candlesticks etc.	1	10	0
"	Four kettles brass pans a warming pan trenchers.	4	0	0
"	An iron pot a dripping pan two spits a Recon and tongs a mortar and pestill.	1	5	0

"	In the parlour three beds and bedding belonging six chests some small implements.	11	10	0
"	In the chamber over the parlour 80 or 90 small cheeses valued at	4	0	0
"	In the chamber over the house a bed and bedding an old ark a little chest a churn and about six bushels of corn.	3	15	0
"	In the barn a cimbling a churn 3 skeels 2 tubs 15 small ffellows 3 cheeses pressed with some small vessels.	1	5	0
"	Some wool valued at	2	15	0
"	In the milk house 12 milk bowls 6 cheese fatts a Temse a can and other small things dishes etc.		17	0
"	3 Pigges 52 sheep fat and lean valued at	20	10	0
"	20 Cows in all and 3 horses valued at	95	0	0
"	Owing to the deceased by Robt. Brewster Rent money.	22	0	0
"	More arrears of rent	17	10	0
"	Owing to the deceased by Francis Wilkinson Rent.	10	0	0
"	More for rent on arrears.	14	0	0
"	Owing to the deceased by Thomas Nicholson Rent.	15	0	0
"	Owing by William Burnet Rent.	10	0	0
"	Some corn growing in the field.	3	0	0
"	Owing by Peter Kettlewell halfe a year's rent arrears.	4	10	0
"	Some old hay some hay growing on the ground valued at	12	0	0
"	A cock and six hens		3	0
		308	10	0

I give and devise to my son Robert Baker a Close called the Whinny Close in the Marishes. To my son James one land in the highfields of Thornton. To my son Robert the sum of ten pounds to be paid by my executor two years after my decease. To my son William half my household goods and clock. To my daughter Ann Hauxwell £40 one year after my decease. To my daughter Elizabeth Robinson £40 one year after my decease. I give to the Overseers of the poor of Wilton 20s to be added to the poors stock to the use and benefit of the poor 6 months after my decease. Direct my executor shall within a month after my decease distribute twenty shillings to such poor inhabitants of Wilton as he shall think needful. The rest and residue to my son Richard Baker.

Signed: John Baker.

Appraised by: Richard Baker, James Jackson,
Tho. Kildell, Robert Baker.

On the evidence of the inventory John Baker relied more on rental income than on that generated by his farming activities, although his cheeses appear to have been somewhat undervalued. It is known that he held land in the neighbouring parish of Thornton and this is confirmed in the inventory and also in his will.

The kettles, pots and pans, when in use, were suspended over the open fire from the reckon. Reckon is a corruption of 'reek iron' meaning the iron which is continually in the reek or smoke. Unlike the gallowbaulk, which was a bar fixed across the chimney, the reckon was hinged and swung a horizontal jib over the fire.

The Cimbling, or Kimlin, was a large dough tub and appears in many inventories. In this connection an early 16th century inventory from Barmby Moor in the East Riding mentions a 'boltynge ark' and a 'Knedynge trough'.

Skeels were wooden pails or buckets. The fifteen small ffellows were almost certainly, felloes, the curved pieces of wood, usually ash, which go to make up the rim of a cart or waggon wheel. A Temse was a hair sieve through which flour was sifted into the Kimlin.

Thomas Kildell, one of the appraisers, was a neighbour of John Baker at Wilton where both rented land from the Hothams. Their names appear in the Wilton Rental for Ladyday [March 25], 1724 [44]. Thomas Kildell farmed on his own account, paying a half-yearly rent of £8 8s 4d, and also in partnership with Richard Baker. The joint entry in the rental reads: Richard Baker and Thomas Kildell for the Twindikes, £9 10s 0d.

The Twindikes or, more correctly, the Tweendikes (literally between the dikes) in Wilton Carr was already ancient enclosure at the time of the rental. (Ancient enclosure in this context means time before the memory of man.) The writer remembers ploughing in this field, with two horses in a single furrow plough, in 1931 and 1932.

An earlier inventory, this time from Cleveland, is that of Robert Newsham of West Harlsey, dated 5 September 1690. His goods, chattels, livestock and husbandry gear were given a value of £118 5s 10d and in addition the sum of £30 5s 0d was owing to him at the time of his death.

In the forehouse, Longsettle and six pewter dublers.
In the kitching, 2 reckons spit brass pots etc.
In the parlours and chambers beds a 'fether' bed 30 cheeses and 2 temses.
In the maid's parlour, bed bedstead and cradle.

In the milkhouse, 2 churns 1 cheese trough 4 dozen bowls 12 shelves 4 skeels tables and 10 firkins of butter (£6 10s 0d).
Corn in the barn and stack and a winder cloth.
Saddle 2 bridles 1 pannill saddle with pads.
21 cows and a bull (£45) one yoke of oxen (£6) 6 young bease (£7) 7 calves (£7) 5 mares and a foal (£6) a lame mare and a lame stag (£1) 6 sheep and 6 lambs (£2 2s 0d).

Dubler = large dish
Winder cloth = winnowing cloth
Pannill saddle = packhorse saddle
Bease = beasts or bullocks
Stag = gelding

A more modest inventory, dated 13 January 1718, is that of Ralph Hutchinson, yeoman, of Lebberston (Filey).

	£	s	d
Purse and apparel.	2	0	0
Two beds and bedding.	1	0	0
In the forehouse, cupboard long settle pewter dishes etc.		15	0
Kettle pot yetling.		12	0
Flesh meat and other provisions.		10	0
In the back rooms, churn two skeels wooden vessels.		6	6
Two oxen (£7) four cows (£7) two young beasts (£2 10s 0d).	16	10	0
Corn in the barn and stack.	5	0	0
Half of the waine and waine gear and half of the plow and plow gear.		18	0
Hay.	2	0	0
Corn on the ground.	4	0	0
Fire Eldin.		5	0
	33	16	6

Yetling = large iron cooking pot standing on 3 short legs and having a bow handle.
Wain = two wheeled long cart open at the front and back and with rails at the sides.
Eldin (or Elding) = firewood.

Inventory of John Moore, Carlton, Helmsley, appraised 5 August 1717.

	£	s	d
Purse and apparel.	5	0	0
8 oxen (£29) 5 kine (£15) heifers calves and four horses (£22).	66	0	0
40 sheep (£6) 1 swine (10s 0d).	6	10	0
20 acres of wheat and rye (£20) 7 acres of barley (£7).	27	0	0
12 acres of oats (£12) Hay on the ground (£5).	17	0	0
Waggon coupes harrows and wains.	10	0	0
In the forehouse dresser settle etc.	3	0	0
In the buttery and milkhouse skeels casks bowls etc.	1	0	0
In the best parlour beds linen etc.	10	0	0
In the back parlour and another little parlour beds and bedsteads.	2	0	0
In the chamber one servant's bed kimlin 2 chests temse and tiffany.	1	0	0
Turves for 'fewell' and manure for the land.	2	0	0
	150	10	0

Coup = two wheeled cart, front, back and sides enclosed or planked.
Tiffany = a sieve using a fine screening material in order to obtain white flour.

An early inventory dated 14 March 1610, is that of Christopher Tomlinson, of Wilton (Pickering Lythe). The list of his goods and chattels is a short one but the final entry is of some significance in a region where cruck framed houses were once commonplace.

The inventory records: One bushell one scuttle two spinning wheels two cushons dublers salts candlesticks brass pots kettles spit tables and two forms. His livestock consisted of: Four 'hummels' and a stirk two kine and a white faced 'whie'. He also left four pounds of wool and 'a payre of forks'.

The description 'cruck framed', as applied to a particular method of construction, can claim no great antiquity in north-east Yorkshire. Atkinson does not include it in his "Glossary of the Cleveland Dialect", but he defines 'forks' as the centres in the timber work of a roof . . . commonly 'a pair of forks' [45].

Elsewhere we learn that; "This mode of construction is generally called 'cruck building', though 'fork building' and 'curved tree construction' are also used to describe it" [46].

Hummel = humbled or polled cattle, i.e. without horns.
Stirk = young cattle of either sex up to a year old
Whie = heifer up to three years old

Generally, 16th and 17th century inventories record household furnishings, utensils and husbandry gear which are not found in later documents. In the absence of written sources the earlier inventories can add much to our knowledge of the social and economic history of the period.

Such a one is the inventory of John Baker, yeoman, of Ebberston, to whom earlier reference has been made. He seems to have farmed fairly extensively with a flock of 228 sheep, 7 kine and twice that number of young cattle. His draught animals were 6 oxen and 9 horses. There were 2 stocks of bees - bees and beehives are mentioned in many inventories - 2 geese and a gander, 12 hens and a cock and 16 'mett poakes', 'In the Hall', as well as the usual furniture there were 'Two reccirons' with a pair of tongs (essential for placing turves on the open fire) a spit, 4 'brandriths' and 4 'bacon flicks'. The bedding included 2 pairs of hemp sheets and 2 pairs of harden sheets.

Hemp and harden sheets appear in a number of inventories up to about 1700. Harden is an extremely rough material and in modern times it was used in the manufacture of coarse aprons. As bedding it must have been distinctly uncomfortable.

Flicks or fleaks are recorded elsewhere. In 1700 the inventory of Francis Wood of Harom, Helmsley, included a 'flick of beef and a piece'; this was valued at 3s 6d. In 1721 William Hauxwell of Allerston left a 'fleak and about 17 cheeses'.

John Baker's husbandry gear included 2 iron bound wains, 2 ploughs, 3 harrows with 'yoakes, teams and horse draughts', '2 pair of wain blades', '2 pair of everins', 'six and thirty sheep bars', '5 axletrees' and '2 gang and an half of waine spokes'.

Yokes and teams = ox draughts
Everins = side extensions to a wain or waggon
Wain blades = shafts
Gang of spokes = a set; normally 12 spokes to a wheel

Brandrith = "a kind of trivet, or tripod, or frame with crossbars set upon feet to receive pans or cooking utensils" [47].
Flick or flake = frame suspended from the ceiling and supporting cheeses or sides of beef or bacon (c.f. Dunmow Flitch)
Mett poake = a mett was 2 bushels; a poke a small sack

The inventory of Randall Baker of Allerston, dated 19 March 1665, shows him to have been a man of modest means, but whose few simple possessions complement those of his wealthier namesake.

His household goods included reckons, pewter dishes, pans 2 little pots with pot lid and 'pot kilps'. Two acres of 'bigg' and an oatmeal trough were valued at 6s 6d. A 'payre of bellows', '5 old poakes', an hour glass and 'an old stie' were given a value of 2s 0d. Finally some 'old tools', some turves and a turf spade, 1s 6d.

Pot kilps = pot hooks
Bigg = a primitive type of barley
Stie, or stee = ladder

Oatmeal troughs are also mentioned in the inventories of William Sollitt of New Malton in 1698 and Mary Pennock of Pickering in 1706. A 'bakston' appears in the inventory of Richard Howthwaite of Stokesley (Cleveland) in 1693, and William Kitching of Pickering, in 1707, left 'an iron backston and frame'. These entries suggest that the consumption of oatcake was not entirely confined to the West Riding.

Many, if not most, of the parishes in the region had ready access to heather moorland so it is not surprising that fuel in the form of turves, ling [heather] and peat was freely available to householders, who invariably had rights of turbary. Elding, the dialect term for firewood, is recorded in a number of inventories and appears to have been used fairly extensively.

The parish of Allerston, with its large expanse of moorland, had fuel to spare. Scarborough in the 16th and 17th centuries, on payment of an annual rent, drew supplies of ling and peat from Allerston Moor. These fuels were being sold in Scarborough Market as late as 1611 [48].

The inventory of Robert Halstead, maltster, of New Malton, dated 1717, includes 55 quarters of 'dry malt', 48 quarters [about 10 tons] of barley and 'a load of turves and some firewood'. It is just possible that Robert Halstead obtained turves from Old Malton Moor, part of which seems to have remained unenclosed until the end of the century.

Of the 150 or more inventories which have been examined only one records coal as a fuel. The inventory of Richard Bowes of Stonegrave in Ryedale, dated 1701, includes the item: "In the Coale Hole - coales, £2 0s 0d." He farmed on some scale, though the appraisers omitted to record his cattle. That he had cows is certain as he left: "In the milkhouse 3 firkins with butter in them", and "In the Hall chamber 4 dozen of cheeses". A 'Livery cupboard' is mentioned and there was "Corne in the Great Barne - Wheat and Maslin, £32 0s 0d".

Two inventories record arms and weapons. The first item in the inventory of Francis Nendick of Pickering in 1557 reads: "Purse apparrell and sword". At that period a man entitled to wear a sword was classed as a gentleman. He appears to have been self-sufficient, having horses, oxen, kine, sheep, stirks and 'Corne on the ground'. His household goods included a 'kimblin', bed hangings, truckle bed, Livery cupboard, table and frame, a carpet cloth, a 'chaffing dish', a silver bowl and two silver spoons.

John Sturdy, Wombleton (Ryedale), in 1691 had: 'In the fier house . . . guns, halberds with other arms, £1 0s 0d. 'Three bibles with other books', beef and bacon were also valued at £1 0s 0d. The appraisers noted a spinning wheel, gavelock, kimblin, 7 yards of cloth, yokes and teames, waines and wool in the stable and cowhouse. The livestock included 4 oxen, 10 kine, 5 young beasts and 3 horses.

It is possible that the halberds were, in fact, pikes. The halberd was a weapon of the Tudor period whereas the pike is associated with the Civil War of the 17th century. If the weapons were, indeed, pikes it may be that John Sturdy had fought in the War and, as the owner of three Bibles, most probably on the Parliamentary side.

Livery cupboard = food cupboard (properly servants' food)
Gavelock = short crowbar

1661 4 January. Thomas Walker, Newgate Foot. A true and perfect inventory of all the goods and chattels of Thomas Walker of Newgate Foot in the Constabulary of Pockley and in the parish of Helmsley praised by we whose names are hereunto subscribed the 9th day of January 1661.

		£	s	d
Imprimis	His purse and apparrill.	1	6	8
"	One bedstead in the chamber with all other necessaries there.	1	4	8
"	In the hall two cubberds with all other necessaries there.	3	0	0
"	Corne and haie in the Barne.	4	0	0
"	One wayne one coupe two yoakes and teames with necessaries thereunto belonging.	3	0	0
"	Two oxen fower kyne three stirks two horses with corne standing upon the ground.	30	0	0
		42	11	4

William Baker. .....Stonehouse.
Joseph Baxton. William Huntriss.

The inventory which follows is somewhat outside the area under review; it is, however. an early one and may be compared with those of similar date and to which reference has already been made.

The inventory which is dated 17 August 1657 lists the goods, chattels, livestock and husbandry gear of Edward Cooke of Allerthorpe near Pocklington, East Riding. Its total value was £300 13s 4d and included: 3 kine, 3 whies, 2 steers, a mare, a foal and a nag. There were 3 oxen, 4 stocks of bees, 2 swine, 10 ewes and 6 lambs. A Helm, wain and coupe with the limmers, 2 hoppingtrees, hemp, plow, teames, harrows and some hay. In the house was bread and cheese, cheesefatts. 2 kimblins, 2 temses, a bushell, a stone of wool, linen, harden and 5 spinning wheels. 2 churns, 4 skeels and a pottle. 17 dublers, a chaffing dish and 6 Quishions. 1 gallow balk and 4 gallow crooks.

The fixed gallow balk, rather than the reckon, appears in other East Riding inventories. With five spinning wheels it must be assumed that Edward Cooke was part farmer and part weaver.

Limmers = shafts for a wain or coupe
Hoppingtree = central draught pole instead of shafts
Cheesefatt = cheese vat
Pottle = a half gallon measure
Chaffing dish = chafing dish
Quishions = cushions

The inventories of widows are more common than might be supposed. Here is one from Hutton Buscel.

1701 Inventory of Sisley Leckby, Upper Yedmandale, Hutton Bushell (Pickering Lythe).

	£	s	d
Purse and apparel.	3	0	0
Cow and calf.	2	10	0
Old hay.		10	0
Corne in the chamber.	1	0	0
Three beds and bedding for one bed.	1	0	0
Brass pewter and smoothing iron.	1	6	8
Cupboard chest and two tables.		13	4
Husbandry gear and an iron pot.	1	0	0
A cupboard and 'spence' with other wooden vessels.	1	6	0
'In moneys'.	42	0	0
	54	6	0

Funerall expenses	£3	0	0
For attendance when sick	£1	0	0

1701 Inventory of Joan Adamson,' Staindill', Bilsdale.

	£	s	d
Purse and apparrell.	2	10	0
53 sheep.	10	0	0
2 oxen and one heifer.	10	0	0
Corn in the house and fields.	6	10	0
Husbandry gear.		6	8
Wool kimbling table etc.	1	3	4
Cupboard bedstead bedding 3 chests 'one with linen in it'.	2	6	8
2 little bedsteads.	1	0	0
Cupboard in the forehouse.		13	4
Pewter brass and candlesticks.		6	8
Table form and chairs.		10	2
2 potts 2 reckons and a pair of tongs		6	8
Bowls dishes trenchers 'stands and a pale'		4	6
	35	18	0

Sisley Leckby's 'spence' was probably a food cupboard. Significantly, the only other reference to a spence occurs in another Hutton Buscel inventory, that of Thomas Keath who died in 1699. His purse and 'apparell' were valued at £1. A cupboard and 'spence' 'with other implements in the forehouse' were given a value of £2. The rest of the household goods, livestock and husbandry gear, £65. 'Livery' [food] cupboard is recorded in many of the inventories; 'spence' may well be the Hutton Buscel equivalent of the livery cupboard.

In the inventory of Joan Adamson the 'stands' were shelves on which the milk bowls were placed; after standing for about 12 hours to allow the cream to rise this was skimmed off and later churned into butter. It was not until the end of the 19th century that the mechanical cream separator came into general use, thus eliminating the tedious skimming process. The separator relies on centrifugal force to part the fat globules from the liquid milk which then becomes 'skimmed' milk or separated milk.

Many of the inventories record sheep numbers. Some flocks were counted singly, the rest were 'scored'. As an example of the former method Joseph Snowdon of 'Egton-in Cleveland', in 1723, left 220 sheep. Thomas Harker of Ebberston, at the time of his death in 1723, had 7 score and 8 sheep. Scoring may have been the older method of counting but the inventories provide no evidence that this was so. Neither is there any tradition in north-east Yorkshire, as there is in the West Yorkshire Dales, of counting sheep using the ancient - probably Celtic - sheep scoring numerals.

20 April 1694 Inventory of William Berryman, Sawdon. (Pickering Lythe).

	£	s	d
Purse and apparel.	5	0	0
6 oxen and two steers (£33 10 0) 4 whys (£12 0 0) 4 stirks (£2 3 4).	47	13	4
7 horses (£12 3 4) 4 score and 18 sheep (£28 4 0).	40	7	4
Corn upon the ground.	36	6	8
Ploughs harrows yokes and teames.		15	9
Beds pewter chests table and forms.	4	9	6
Cheese press.		2	6
	134	15	1

Many inventories provide examples of phonetic spelling and variations in the spelling of the same word; both are to be found in the following inventory.

4 January 1689/90 A true and perfect inventory of William Morry the younger of Lockton, Pickering Lythe, yeoman, valued by Robert Morry, Edward Thornhill, Matthew Bayley and Francis Body.

	£	s	d
Purse and apparrell	3	0	0
One cupboard two tables with frames one long settle one chair and also six little 'pewther' dishes with two candlesticks one brass kettle one brass pot two little brass 'panns' and one pot of iron with all the other implement things in the forehouse.	3	10	0
One bed furnished one bedstead one panel chest			
one churne with other implements.	2	5	0
Two oxen two kine three whyes one horse and one calf.	12	0	0
One 'sorril nag'.	2	5	0
Sheep young and old.	18	1	0
Corn and hay in the barn with 'corne' sown on the ground and some hay elsewhere.	5	0	0
One wain one plough one harrow with all other things belonging to husbandry.	2	10	0
Two hives of bees two geese one gander and other 'pullon'.		15	0
	49	6	0

Debts owing by the testator to several persons in all. £11.

The word 'pewther' was spelt as pronounced by a dialect speaker, and this spelling - also 'puther' - appears in a number of the inventories. Marshall, who was something of a philologist, remarked: . . . "there is one peculiarity of articulation which is noticeable . . . this is the articulation of the 't' in butter, matter, also in tree, trace, tread; the articulation is between 't' and that of 'th' [49].

In the 17th century individuals continued to spell much as they pleased. In the above inventory we find 'corn' and 'corne'.

Elsewhere we have 'barn' and 'barne', 'wain' and 'wayne', 'plow' and 'plough, and 'apparel' and 'apparrell'. Even today the articulation, as described by Marshall, can still be heard in the more rural parts of the district.

Sorril, or sorrel, nag = light chestnut coloured saddle horse

Pullon = poultry

William Pennock of Pickering appears to have been part tradesman and part farmer; a not unusual combination. His inventory is dated 1705 and among the items noted by the appraisers was a truckle bed in the parlour, two boxes of tobacco in the warehouse and some 'parcells of groceries in the shop'. They also recorded 'manure before the door in the street' and valued it at 7s 6d.

Until the 19th century parlours and chambers were used indiscriminately for storage and sleeping. In 1690 Thomas Fisher of Sand Hutton, Bossall, had in the 'Far Chamber' barley, pease. oats, plough gear, 'wooll' with bedsteads and a spinning wheel. In the 'hither chamber' feather beds and linen.

In the inventory of Peter Wilson of 'Appleton in the Street' (Ryedale) in 1730, the appraisers recorded: "In the chamber over the house seven quarters of barley". If their estimate of the quantity of barley was correct then the chamber floor was supporting about 28 cwt.

Window curtains are mentioned in the inventory of William Peacock of Nunnington, Ryedale, in 1717. In the two parlours and three chambers were beds and 'bed hangings', tablecloths, linen, a 'wanded' [wicker] chair, spinning wheels. a porringer and a chamber pot; two large 'seeing glasses', window curtains and 'China Plates'.

The sole reference to potatoes is found in the inventory of Richard Vasey of Thornton Marishes (Pickering Lythe), who died in 1721. He left horses, 10 cows, young cattle and a 'yow' and two lambs. There was rye in a 'pyke' and oats in two 'pykes', much household furniture, '16 or 17 cheeses', some 'met' pokes and a 'parcel' of potatoes.

Pyke, or pike = a small round stack of hay or corn

The cultivation of the potato would soon become general throughout the area, as would that of oil seed rape and turnips.

"Considerable quantities of potatoes are raised in the District under survey. Almost every man, be his farm ever so small, cultivates potatoes in the field . . ." [50].

There are few inventories after 1780 and they are less detailed than those of a century or so earlier. One of the latest to be examined is that of William Jowsey of Wilton dated 1783. He left 3 cows, a heifer, a mare and 4 pigs. 'Stock in traid' and tools were valued at £4 5s 6d; his total assets were worth £36 15s 0d.

He combined the trades of blacksmith and carpenter - Wilton being a small township - and like later Wilton blacksmiths down to the 1930s, was part-time farmer. William Jowsey, in 1740, had a new shop provided for him by Sir Charles Hotham, the Wilton Landlord. As far as possible local materials were used in the building; stone from Wilton quarry and the wheat straw for thatching the roof were supplied by Wilton tenants but paid for by the estate [51].

The period 1770 to 1820 was one of intense activity in converting the open arable fields, and some commons and moorland, to enclosure. In Yorkshire the social impact of enclosure was less disruptive to the peasantry than it would prove to be in the midland and southern counties. Most of the open fields in Ryedale and the Vale were enclosed at this time with results beneficial to landlord and tenant alike, if the evidence from one township is typical of the whole, and there is no reason to think that it is not.

In the year 1752 the Wilton Rental amounted to £508 6s 8d. In 1771, immediately prior to enclosure, the rental had marginally increased to £539 6s 8d. In 1791, some sixteen years following enclosure, the rental for that year had increased to £821 19s 4d and there were no defaulters; all paid [52].

It is true that prices, generally, were rising at this time but much of the credit was due to vastly increased production following enclosure. Individual management, impossible under the old open field system, more thorough cultivation, the greater use of clover and turnips in crop rotations, thus reducing the need for bare fallow, improvements in cattle breeding - all played a part. However the agrarian history of the 19th century is well documented and recorded and is beyond the scope of this short survey of probate inventories and rural economy in the 17th and 18th centuries.

Although the primary object of the probate inventories was to ensure a fair and equitable distribution of assets, they do, quite unintentionally, add greatly to our knowledge of 17th and 18th century land use, livestock husbandry and rural and domestic economy.

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REFERENCES

1. YOUNG, A., 1771, A Six Months Tour Through the North of England. 2nd Edition. 4 Volumes.

2. MARSHALL, W., 1788 Rural Economy of Yorkshire.

3 LELAND, J., 1964 Leland's Itinerary in England and Wales. Vol. 1, p.63.

4. DEFOE, D., 1983 A Tour Through the Whole Island of Great Britain. p528. First published 1724/26.

5. DEFOE, p.532.

6. DEFOE, p.532.

7. YOUNG, Vol. 2, p.1.

8. YOUNG, Vol. 2, pp.8-9.

9. YOUNG, Vol. 2, p.43.

10. YOUNG, Vol. 2, pp.64-66.

11. YOUNG, Vol. 4, p.426.

12. HORN, Pamela, 1982, William Marshall (1745-1818) and the Georgian Countryside.

13. MARSHALL, Vol. II, p.105.

14. MARSHALL, Vol. I, p293.

15. MARSHALL, Vol. II, p.196.

16. HADFIELD, C., 1972, The Canals of Yorkshire and North-East England, Vol. I, p.98.

17. ROBINSON, J.F., 1978, The Archaeology of Malton and Norton, p.17.

18. MARSHALL, Vol. 1, p.409.

19. HADFIELD, Vol. II, p.323.

20. HINDERWELL, T., 1811, History of Scarborough, 2nd edition p.241.

21. YOUNG, G., 1817, A History of Whitby and Streoneshalh Abbey, Vol. II, p.803.

22. FUSSELL, G.E., 1966, The English Dairy Farmer 1500-1900. p.266.

23. FUSSELL, p.269.

24. MARSHALL, Vol. II, pp.199-200.

25. LISLE, E., 1758, Observations in Husbandry, 2nd Edition in two volumes, Vol. II, pp.143-145.

26 MARSHALL, Vol. II, p.196.

27. MARSHALL, Vol. II, p.197.

28. MARSHALL, Vol. II, p.200.

29. YOUNG, A., Vol. 2, p.67.

30. TUKE, J., 1800, General View of the Agriculture of the North Riding of Yorkshire, p.337.

31. GEORGE, M.D., 1925, London Life in the 18th Century, p.169.

32. MARSHALL, Vol. II, p.272.

33. MARSHALL, Vol. II, p.271.

34. HALLIDAY, W.J. and UMPLEBY, A.S. (Eds.), 1949, The White Rose Garland, p.133.

35. MARSHALL, Vol. II, p.22.

36. TUKE, p.120.

37. TUKE, p.117.

38. MARSHALL, Vol. II, p.194.

39. HMSO, 1987, Houses of the North York Moors, p.63.

40. TUSSER, T., 1984, Five Hundred Points of Good Husbandry. p.124. First published 1573.

41. Victoria County History of the North Riding, 1923, Vol. II. p.462.

42. Victoria County History of Yorkshire East Riding, 1974, Vol. II, pp. 167, 169, 332, 335.

43. MARSHALL, Vol. II, p.318.

44. Hotham Papers, Wilton Rental ref. DDHO/14 University of Hull.

45. ATKINSON, REV.J.C., 1868, A Glossary of the Cleveland Dialect, p.196.

46. BATSFORD, H. and FRY, C., 1944, The English Cottage, 2nd Edition, p.14.

47, ATKINSON, p.64.

48. BAKER, J., 1882, The History of Scarbrough from the Earliest Date, pp.341-342.

49. MARSHALL, Vol. II, p.308.

50. MARSHALL, Vol. II, p.56.

51. Hotham Papers: A/Cs ref. DDHO/15.

52. Hotham Papers: Rentals ref. DDHO/14.

OBITUARIES

In 1990 the Society lost two members of long standing who had made notable contributions to its activities, namely Miss D.E. Leese-Layton and Miss F.D. Gullen. Honorary life membership had been conferred on both of them in recognition of their services to the Society.

DORIS E. LEESE-LAYTON

Miss Leese-Layton was a member of the Society for very many years. She served on the committee from 1962 to 1976 and was the Society's librarian from 1966 to 1973.

She had a particular interest in Roman Britain and made frequent visits to Hadrian's Wall and other Roman sites in the North of England. The excellent slides which resulted from these visits were used to good effect in several lectures which she gave to the Society.

In later years Miss Leese-Layton turned her attention to local history and especially to the development of Falsgrave in the 19th century, a subject on which she contributed articles to the Transactions (Numbers 24, 25 and 26).

Miss Leese-Layton died on the 22nd May 1990.

FLORENCE DOREEN GULLEN

Miss Gullen first became involved in the work of the Society in 1961 when she was elected to the then newly created office of assistant secretary. For several years she was a very active assistant to Mr. F.C. Rimington, whom she succeeded as secretary in 1965. After four years in that office she was a vice-chairman from 1969 to 1971 and chairman from 1971 to 1973.

Miss Gullen's main interest was in local history, on which she made occasional contributions to members' evenings, but her greatest contribution to the Society was undoubtedly in the field of administration. Whatever office she held, she held it with distinction and even after she ceased to hold office she was always ready to assist with whatever needed doing to keep the administration of the Society running smoothly. Indeed for many years she played an important part in the production of the Transactions.

A graduate of St. Andrews University, Miss Gullen was a mine of information and many of us have reason to be grateful to her for sound advice and words of encouragement. We also remember with pleasure and appreciation the hospitality we enjoyed when, for many years, our committee meetings were held at her home in Osborne Park.

Miss Gullen died on the 15th July 1990.

David Futty